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THE CONTINUOUS CASTING OF STEEL*

By ISAAC HARTER

(Chairman, Babcock and Wilcox Tube Company)

The developments in continuous casting of steel, which are the subject of my talk tonight, are being made jointly by the Republic Steel Corporation and The Babcock & Wilcox Tube Company. Our effort is to simplify or eliminate some of the present steps in making steel products and to reduce the capital and operating costs now required in making steel. Upon the completion of this development, we expect to offer licenses to other companies for whom this method will save money.

I shall try to show how the growth and changes in the steel industry have now brought about a need for decentralization and the advantages of continuous casting for this purpose; exactly which steps in steel-making continuous casting will change or replace; what difficulties have prevented its earlier use; what it looks like in operation; and what may be expected of it in the future.

Iron making in America is older than the United States. Of particular interest to this audience is that only a few miles from here, at Saugus, the first successful iron works in the United States made iron as early as 1650. Within twenty-five years of that time there were eight more such works within less than fifty miles of Boston, one of which was in operation as recently as 1875. In fact until 1750, Massachusetts was the principal colony producing iron, and the existence of this industry in the Colonies was one of the major sources of contention between your Commonwealth and the Mother Country.

In the last several hundred years there have been many great changes in melting and casting methods in the production of iron and steel. They are as follows: The use of coke instead of charcoal for smelting, first introduced about 1650 and in full use by 1725; second, the use of the heat generated in smelting to preheat the ingoing air, a change occurring between 1825 and 1850; third, and somewhat later, the use of ingot molds instead of the slow and laborious operation of casting in sand; fourth, the invention of the Bessemer converter, almost one hundred years ago, which made it possible to produce cheap steel in quantity; fifth, the introduction of the open hearth furnace about 1860; and sixth, the development since 1900 of the electric arc furnace with its great improvement in quality and flexibility of use. In addition to

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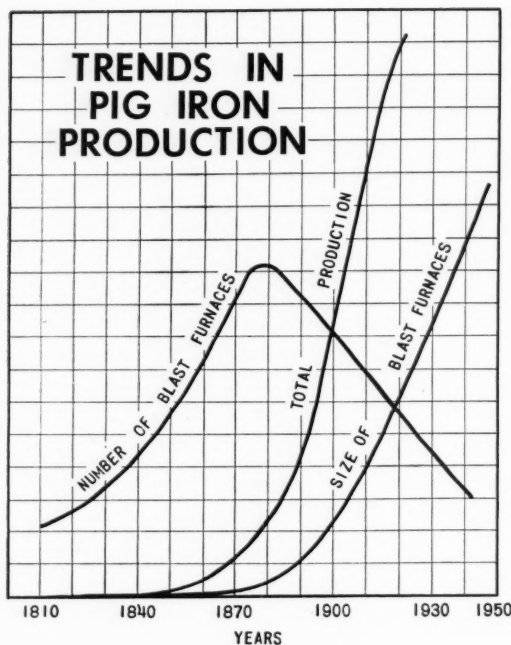


FIGURE I

these changes in steel melting and casting, there have been many changes in rolling and other finishing operations.

Until one hundred years ago, steel making in America was being carried on mostly by many small plants. However, during the nineteenth century the rapid growth of population generated a vast market for both quantity and variety of steel products. To meet this demand, better methods and better machines were developed; the progressive companies grew large; the others went out of business because they could not meet the lower operating costs of the better mechanized companies. Typical of this trend is the development in pig iron production. The number of blast furnaces increased sharply until about 1880, but as technical improvements made it possible to increase the size of blast furnaces, it was possible to produce more and more pig iron from fewer and fewer furnaces.

The increase in the variety of products required led naturally to separating the industry into two kinds of manufacturing groups. The

first group, known as the "integrated companies," begins with the basic materials—iron ore and coal—and carries right on through to some of the most important finished products. The second group, referred to as "non-integrated companies," receives semi-finished steel on a large scale from the first group and converts this semi-finished steel into finished products. Two examples of the "non-integrated companies" were the mills that made wire and sheets and the small bridge and structural fabricating companies whose products rarely went beyond one hundred miles from their plants. An important element in the gradual disappearance of these companies was the fact that the larger companies which sold them their raw material—*i.e.*, semi-finished steel—and whose prices for finished products they had to meet in the open market, so reduced their manufacturing costs and prices for those products as to leave the little companies less and less margin for profit. Improvements in operating methods and equipment requiring a large capital investment also were vital elements in making existence difficult for them. The most striking example of this is probably the introduction of the high speed sheet rolling mill, which in a few years ended the very existence of the small sheet mills. The investment in these modern high speed mills has already exceeded a billion dollars.

There are at present signs that this centripetal phase is reversing and that the industry will spread out geographically into smaller plants with an increase in the number of companies engaged in making steel. This change will result from:

1. The spreading out of other industries, which has been so marked in recent years.
2. The continual increase in cost of raw materials, of finished products, and of transportation.
3. The need to obtain more ore from outside the United States.
4. The need to reduce both the size of plants and their geographic concentration for reasons of military security, and to obtain improvements in management and social conditions.

While these forces tending toward decentralization are strong, the rate of reversal is bound to be slow because of the very large amount of capital now invested in existing plants for making steel.

A fully integrated company usually owns deposits of coal, iron ore, limestone, and may even own the railroads and ships in which to transport these raw materials. It has blast furnaces, some of which can produce as much as fifteen hundred tons of molten pig iron a day. This pig iron is fed in a molten state to open hearth furnaces, some of which can produce as much as four hundred tons of steel in a single

heat. Steel from the open hearth furnace is cast into ingots, which are subsequently reheated and then rolled on a very heavy primary mill called a blooming mill. The blooms or semi-finished steel are again reheated and rolled on one or more mills into the finished product.

In an effort to reduce the cost of these steps, the industry has spent large sums for the necessarily large and powerful equipment to handle very heavy ingots. For example, the ladles for ingot casting are frequently large enough to contain two hundred tons of steel. Each ingot cast may weigh as much as twenty-five tons. The massive blooming mills, soaking pits and other necessary apparatus required for the first rolling of these ingots frequently cost as much as fifteen million dollars. The three largest steel companies cast over forty million tons per year and to replace their plants would cost about fifteen billion dollars. Hence, to attempt to become fully integrated is certainly impossible for the small companies that make a single product and ship only fifty thousand to two hundred and fifty thousand tons a year. They can go so far up the production line for raw material as to buy pig iron. However, relatively less pig iron becomes available all the time and it cannot be used in the electric arc furnace—the only melting furnace which the small company can possibly afford. Steel scrap must therefore be the starting point. The electric furnace is ideal for a small company or for a new isolated plant of a large company for two major reasons. First, the initial cost of an open hearth furnace today is about twice as much as the cost of an electric arc furnace for the same melting rate. Secondly, the cost of electricity, thanks to the ingenuity of those who make it, has not increased as much as open hearth fuel. Therefore, for the first step—namely melting—the electric arc furnace makes it possible to save in capital investment and also to melt small quantities of steel economically. Bypassing ingot casting, soaking pits, and the blooming mill by going directly from the melt to a casting, equivalent in cross sectional area to the bloom, would obviously be a considerable saving. It would benefit either the big producer who wanted to build an isolated plant or replace obsolete equipment, or the small producer seeking ways to cut costs. These are the very steps which continuous casting of steel eliminates.

In addition to the advantage obtained by eliminating a great amount of expensive equipment, the continuous casting process delivers a very high percentage of the metal originally melted to the finishing mill, avoiding the necessary series of losses incurred in the many steps in conventional metal processing. In stationary casting, the top and bottom must be cropped from each individual ingot. This loss averages approximately eighteen per cent and since the entire heat is cast into ingots, this percentage remains constant regardless of the size of

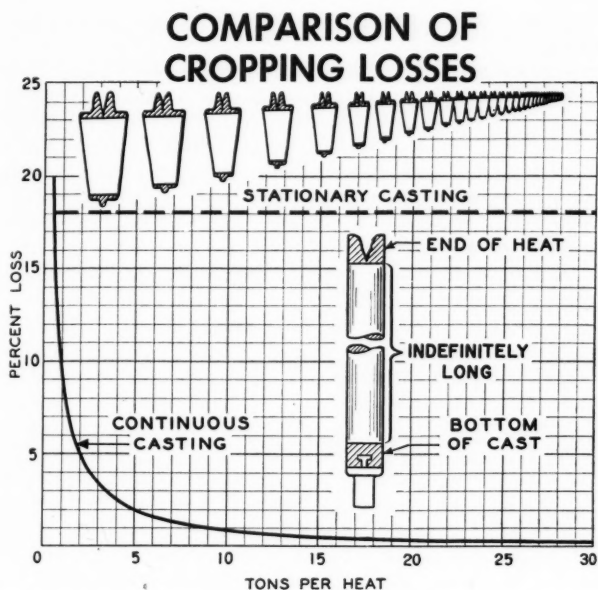


FIGURE II

the heat. On the other hand, although a continuously cast heat must also be cropped both at the top and bottom, two advantages are evident. First, the cross-section is smaller and therefore the pounds lost in cropping are less. Secondly, as this pound loss remains constant, the percentage of total loss decreases with an increase in the size of heat. Incidentally, since the value of the material saved increases with the cost of the product, it is natural that the earliest uses of continuous casting, with its high yield, were in high-cost metals.

Approximately one hundred years ago one of the earliest inventors in the steel industry, Sir Henry Bessemer, became interested in the possibilities of continuous casting of steel and obtained a patent. Examples of his attempts are still in existence. In recent years the continuous casting of brass, copper, and aluminum has been developed and practiced on a large commercial scale; however, the first commercial continuously cast steel ever made, amounting to a few tons which we produced during our experiments, was not shipped until 1947. While we have made and tested about six hundred tons of good

quality steel, there is as yet no plant running anywhere in daily production.

Some of the reasons why these non-ferrous metals have been cast commercially, and why steel has not, are easy to find.

In the first place, in the molten state the non-ferrous metals contain much less heat. Molten copper contains only about sixty per cent and aluminum only about thirty per cent as much heat as does steel. Secondly, the pouring temperatures of these metals are also lower; that for copper is about seventy-five per cent and that for aluminum about forty-five per cent that of steel. Thirdly, the thermal conductivity of steel is *less* than that of the non-ferrous metals. The conductivity of copper is ten times greater and aluminum is over four times greater than that of steel. In addition to these very apparent obstacles, steel, due to its low unit price, should be cast about five times faster than copper and about fifteen times faster than aluminum for economical production.

CONTINUOUS CASTING PLANT

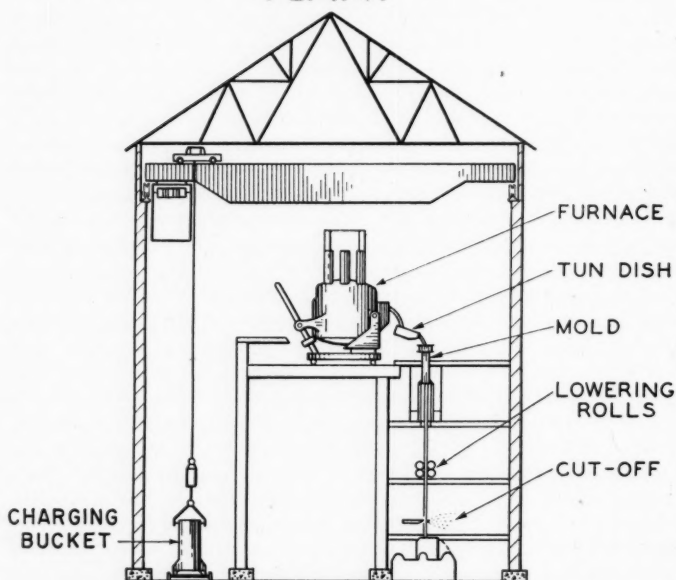


FIGURE III

A particularly important point that has held up the progress of the continuous casting of steel is that there are no materials for containing molten steel which steel does not either erode or dissolve.

Before reviewing the requirements for successful continuous casting of steel, it might be helpful to outline the process as we now carry it on. In the continuous casting of steel, the furnace can either melt steel scrap or receive molten steel from another furnace. In either case, the furnace then maintains the correct temperature of the steel while casting and delivers the metal at a uniform rate. Since steel must be protected by a slag layer, some of this slag may be entrained by the stream of molten metal. To remove this entrained slag, we have interposed a vessel known as a tun-dish, the purpose of which is to separate the slag from the steel, as well as to serve as an easily movable means of directing the stream of steel into the proper place in the mold.

Our continuous casting mold is an open-ended brass tube, very effectively cooled by the use of high velocity water racing downward over its outer surface.

During the cast we continuously introduce into the upper end of the mold a small amount of inert gas and a minute quantity of a combustible oil which serve respectively to exclude and absorb oxygen.

The casting is allowed to move from the lower end of the mold at a pre-selected rate dependent upon the casting size. The rate is governed by spring loaded rolls operating as a running brake.

In order to start a cast, we thread a leader bar or dummy upward through the rolls and install a close-fitting head on the bar to form a temporary bottom in the mold. The first metal cast, freezing around the protruding bolts of this head, locks the casting to the bar which serves to guide the casting downward through the after coolers and rolls. A means of cutting the casting to the desired length is located below the rolls. The severed bar is then lowered to the ground and discharged as semi-finished steel. This material is now ready for reheating and rolling on a conventional finishing mill.

There are seven basic requirements for successful continuous casting of steel:

1. Steel Composition Control
2. Pouring Temperature
3. Slag Separation
4. Proper Mold Design
5. Automatic Pouring Control
6. Proper Casting Cross Section
7. Auxiliary Cooling Below the Mold

The problems in continuous casting are related like the links in a chain, so that each link must be present and united. Either you have a

useful chain or nothing. Making a good chain is not any easier if, as in this case, each link is made of a different material and may even require a different kind of blacksmith to make it. In this case, the chain has a good many links and I will give a description of how far we have progressed with each link.

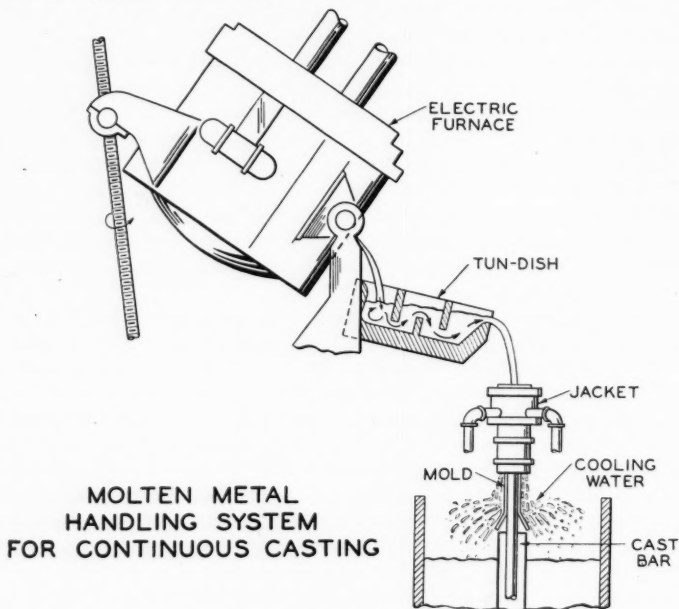


FIGURE IV

A heat of steel is ready for pouring when it has been brought to the required analysis and temperature. Whether it is cast in stationary molds or continuously cast, undue delay in casting is harmful because of the rapidity with which steel reacts with air and other gases. Improvement in this respect should be made in both casting processes, and improvement may well turn out to be simpler to make in the case of continuous casting. With care, the arc furnace makes it possible to hold composition for the duration of a cast. This link is now good enough for commercial production.

Our experiments have shown that the entire cast should be made within a 50-degree temperature range. This requires control of temperature by supplying heat to the molten steel during pouring. This is

done by means of a heated holding and casting ladle, the heat being supplied either by electric induction or by an electric arc. The objection to the former is the necessary water cooling of the induction coils which creates the risk of a serious accident if molten metal breaks through the ladle lining and reaches the water. The objection to the arc furnace, with its saucer-shaped bath, is its larger size for a given amount of metal. This link is now being improved.

In conventional pouring of steel, slag rises to the top of the ladle and the stream comes through a nozzle in the bottom. Slag and metal are related in weight about as wood chips are to water; hence bottom pouring is a good separator. Bottom pouring cannot be used in continuous casting because it does not provide a uniform flow. In the first place, the flow through a bottom pouring nozzle varies with the fullness of the ladle; secondly, no refractory is yet known which will not change in size when molten steel flows over it or through it for a long time. Thus, we are forced to use a top-pouring ladle. In pouring from the furnace, some slag escapes with the steel and this slag must be prevented from entering the mold by the tun-dish. This tun-dish has an inverted weir which acts somewhat as the bottom-pouring nozzle does in the conventional process. That the mold must be slag-free is a necessity. If slag wets or sticks to the mold, it will act as a sort of wedge between the mold and the barely frozen cast. If the slag does not actually stop the casting, it will finally go down between the mold and the cast and appear as a serious imperfection in its surface. This action is repeated as long as the slag accumulates on the surface of the metal. When slag is not present, the liquid steel meets the mold surface in the same way as the mercury in a barometer touches the glass, and is non-wetting. This problem has been solved reasonably well.

For reasons of economy the minimum rate for casting all but the very costly steels must be several times as fast as for the non-ferrous metals earlier mentioned, which are much more expensive than ordinary steel. This high rate of casting, in conjunction with the adverse thermal properties of steel previously mentioned, made the problem of mold design a difficult one. Our experiments have shown that to cope with these factors and to be amply safe, the mold must be designed with margin enough to withstand a steady stream of steel directed against it at one spot for an indefinite time without even marking the mold. Our mold with this cooling ability is absorbing heat in the region in contact with the hottest steel about fifty times as fast as in the hottest part of a high-duty modern boiler furnace. This is, we believe, the highest thermal transfer rate in use for any purpose. To make this rate possible, water must flow across the outside surface of the mold at an extremely high velocity. Those familiar with prob-

CONTINUOUS CASTING SCHEMATIC MOLD ASSEMBLY

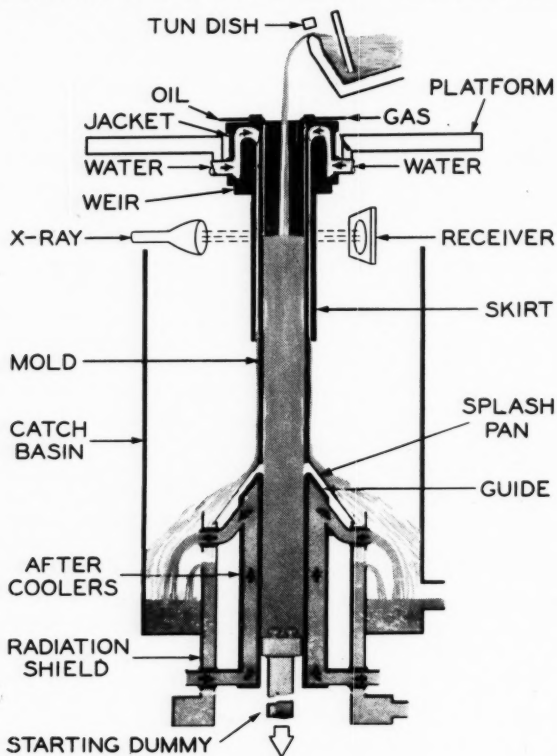


FIGURE V

lems of hydraulic cavitation will realize with what care the shaping of the passageways leading to the mold must be made. Our present mold may be even better than it needs to be. Thus, this link in the chain is in especially good condition.

A man who is continuously casting brass or the other non-ferrous metals by manual control is not prevented by radiation of heat or light from being as close to the work as he must be, because non-ferrous metals may be conveyed through a metallic or refractory pipe, and their flow regulated by a hand operated valve. With steel it is a physical impossibility for a man to stay as near to the stream of metal as he must if the regulation of rate of pouring and the rate of extraction is to be left to his eyes and his hands. The radiation is too intense and beyond endurance as a daily task. A second reason for giving this job to a control mechanism is that even with a pouring furnace as small as five tons, the amount of steel supplied in tipping the furnace through an angle of one minute of arc, at the rate we cast, would result in a change of level several times the allowable fluctuation of the metal level in the mold. Control of this relationship is more than a skillful man can manage for even a few minutes. As the pouring ladle or furnace for commercial production is likely to be twenty-five to fifty tons in size, we can be certain that completely automatic pouring is an absolute requirement before continuous casting of steel will make a significant change in the methods of the industry. We have found by having the changing metal level in the mold occlude a shaped X-ray beam which passes on through the mold to an ionization chamber, that the ionization intensity change can be used to control the angular rate of tipping the furnace. The control mechanism for this purpose must not only control the overall relationship between the metal entering the mold and that which is leaving it, but it must also be able in a sufficient degree to counteract hunting—that is, excessive alterations of the pouring rate. This link is in excellent condition.

It is natural that experimenters have usually tried to cast circular, square, or rectangular sections, which are the shapes now commonly rolled. However, as castings, there are grave objections to all three shapes. These objections arise mainly from the fact that steel freezes in two ways: in one, polyhedral grains are formed; in the other, columnar grains. In any form of freezing of steel a large quantity of the impurities are forced into the boundaries between the grains where they are a cause of weakness. In polyhedral freezing the random arrangement of the boundaries lessens the spread of cracking along them, but the columnar grains which grow perpendicular to the surface of the casting have their long sides parallel, and if a crack begins it can easily extend and become a serious or fatal defect.

The objections to the round section are that it has the least cooling surface for the most weight, that its time of freezing increases in direct proportion to its weight increase, and that the cold region near the surface acts like an arch trying to prevent shrinking as the interior cools, thereby causing it to deform and crack. These reasons suggest a flattened section with a much greater perimeter for its weight and, on the average, a much smaller distance through which the heat has to travel to escape. The square also cools slowly in direct proportion to its section and its columnar pattern tends to form cracks. The rectangle, if not too long and narrow, stands well in respect to rapid freezing as the heat has a short path of escape; however, the freezing pattern produces a plane of weakness which may easily cause cracking.

An oval casting has two relatively pliable sides, yielding as the casting shrinks, thus avoiding cracking. It has a large surface to weight ratio, and therefore cools rapidly. The columnar grains grow at right angles to the surface near which they originate until they interfere with each other, and they arrive near the central plane at different times and from different directions so that the central plane is much less sharply defined than it is in a rectangle and is, therefore, much stronger. Experimenting soon showed the value of the oval shape, but there are many types of ovals. To determine experimentally with steel which group of these ovals yields the most satisfactory casting would have been extremely slow and costly. We have solved this problem by using a low temperature alloy which has a freezing pattern and cracking tendencies so like steel as to serve perfectly in its stead. We regard this link in the chain as one of the most important and, so far as we can tell, little or nothing remains to be done to perfect it.

It would be difficult and inconvenient to make a mold long enough to solidify the steel completely. With the use of a mold of practical length, so much of the interior of the casting is soft or molten where it leaves the mold that if the section is not supported it will swell and crack. At economic casting speeds, this can occur for a considerable distance below the mold and therefore a means somewhat similar to the mold itself must be used to keep the casting from swelling. We now have satisfactory devices for this purpose.

New England is at present deeply interested in establishing a steel mill in one or perhaps two locations within its boundaries. The New England Council, the railroads, and some of the banks are studying the various elements of this necessarily complex question. The most important question is whether such a plant should be fully integrated or should start with New England's scrap. This is a basic question because, though an economical supply of metallurgical coke may be available, cheap iron ore will not be available for two or three years.

Even then, the most economical supply will only be obtained from deposits which normally would require sea transportation and are therefore subject to the hazards of war. Furthermore, the investment required for an integrated mill of the same annual capacity would be approximately three times the cost of a non-integrated mill.

If the various studies now being made in New England should result in showing that the local supply of scrap and the demand for steel products conveniently made from it are in reasonable balance, then it would seem that there is much to be said for beginning with scrap, and leaving the relatively large financial and supply problems involved in full integration for some later time. In that case, continuous casting becomes of special interest and for that reason I wish to give you an idea of the degree to which our development could be used in such a project and in particular how soon the process could be proved for installation.

Our work to date would justify the construction of a plant for regular production, casting oval cross sections with an area of twenty-five to forty square inches. These castings would be suitable for rolling into stock from which bars, rods, wire, narrow width strip and other products can be made. These are all products that fit very exactly into the requirements of New England Industry.

We are now engaged in constructing and will expect to test during this year a mold of about one hundred square inches to make a casting suitably shaped to supply a continuous sheet mill for rolling widths up to about twenty-six inches which is the greatest width that can be handled in our present casting building. A mold of our design for this purpose is so constructed that it can be enlarged without limitations to even greater widths. Upon completion of this development, we expect that continuous casting could be eventually applied to twenty-five to thirty per cent of the industry's tonnage, whereas a plant making sections of less than forty square inches would account for only about fifteen per cent of the country's output. Therefore, we think it unwise to build plants of limited size range until we have found how much larger cross sections we can cast.

We are very mindful that a process entailing a major change in any industry should not be undertaken on a commercial scale until it can be surely known in advance that it will be highly successful. This general rule applies with special force to the continuous casting of steel because of the failure of earlier attempts. We believe, however, that the most advantageous location and the most suitable product for a first plant can be determined and the plant built so that by 1952 the low capital and high yield characteristics of this process will be commercially proven to a point warranting its further and general extension in the steel industry.

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23	Samuel Alfred Mitchell.....	University, Va.
29	Marston Morse.....	Princeton, N. J.
19	Forest Ray Moulton.....	Washington, D. C.
44	John von Neumann.....	Princeton, N. J.
43	Cecilia Payne-Gaposchkin.....	Lexington
18	Henry Bayard Phillips.....	Lincoln
96	Charles Lane Poor.....	New York, N. Y.
50	Eric Reissner.....	Cambridge
02	Henry Norris Russell.....	Princeton, N. J.
20	Harlow Shapley.....	Cambridge
09	Vesto Melvin Slipher.....	Flagstaff, Ariz.
21	Joel Stebbins.....	Mt. Hamilton, Cal.
27	Harlan True Stetson.....	Fort Lauderdale, Fla.
30	Dirk Jan Struik.....	Belmont
42	Otto Struve.....	Williams Bay, Wis.
23	Oswald Veblen.....	Princeton, N. J.
29	Joseph Leonard Walsh.....	Cambridge
41	Fred Lawrence Whipple.....	Cambridge
32	David Vernon Widder.....	Arlington
48	Oscar Zariski.....	Cambridge

CLASS I, SECTION 2—*Physics*—73

28	Adelbert Ames, Jr.....	Hanover, N. H.
50	Carl David Anderson.....	Pasadena, Cal.
37	Kenneth Tompkins Bainbridge.....	Cambridge
21	Samuel Jackson Barnett.....	Pasadena, Cal.
49	Jesse Wakefield Beams.....	Charlottesville, Va.
42	Francis Birch.....	Cambridge
50	Francis Bitter.....	Cambridge
12	Percy Williams Bridgman.....	Cambridge
26	Walter Guyton Cady.....	Middletown, Conn.
03	George Ashley Campbell.....	Upper Montclair, N. J.
21	Leslie Lyle Campbell.....	Lexington, Va.
16	Emory Leon Chaffee.....	Belmont
28	Arthur Holly Compton.....	St. Louis, Mo.
31	Karl Taylor Compton.....	Cambridge
12	Daniel Frost Comstock.....	Lincoln
47	Edward Uhler Condon.....	Washington, D. C.
15	William David Coolidge.....	Schenectady, N. Y.
34	Franzo Hazlett Crawford.....	Williamstown
13	Henry Crew.....	Evanston, Ill.

11	Harvey Nathaniel Davis.....	Hoboken, N. J.
29	Clinton Joseph Davisson.....	Charlottesville, Va.
12	Arthur Louis Day.....	Bethesda, Md.
01	Alexander Wilmer Duff.....	Worcester
45	Robley Dunglison Evans.....	Belmont
09	Arthur Woolsey Ewell.....	Worcester
39	Harry Edward Farnsworth.....	Providence, R. I.
49	James Brown Fisk.....	Basking Ridge, N. J.
49	Nathaniel Herman Frank.....	Cambridge
43	Philipp Frank.....	Cambridge
49	Wendell Hinkle Furry.....	Cambridge
29	Arthur Cobb Hardy.....	Wellesley
31	George Russell Harrison.....	Belmont
14	John Charles Hubbard.....	Washington, D. C.
17	Gordon Ferrie Hull.....	Hanover, N. H.
40	Frederick Vinton Hunt.....	Belmont
22	Edwin Crawford Kemble.....	Cambridge
44	Ronold Wyeth Percival King.....	Winchester
43	Edwin Herbert Land.....	Cambridge
37	Ernest Orlando Lawrence.....	Berkeley, Cal.
31	Robert Bruce Lindsay.....	Providence, R. I.
01	Theodore Lyman.....	Brookline
34	Louis Williams McKeehan.....	New Haven, Conn.
14	Robert Andrews Millikan.....	Pasadena, Cal.
34	Harry Rowe Mimmo.....	Lexington
34	Philip McCord Morse.....	Cambridge
49	Hans Mueller.....	Cambridge
31	Otto Oldenberg.....	Cambridge
40	J. Robert Oppenheimer.....	Princeton, N. J.
34	Leigh Page.....	New Haven, Conn.
07	George Washington Pierce.....	Cambridge
50	Edward Mills Purcell.....	Cambridge
41	Isidor Isaac Rabi.....	New York, N. Y.
50	Norman Foster Ramsey.....	Cambridge
48	Bruno Benedetto Rossi.....	Winchester
48	Julian Seymour Schwinger.....	Boston
27	John Clarke Slater.....	Cambridge
37	George Walter Stewart.....	Iowa City, Ia.
43	Donald Charles Stockbarger.....	Belmont
46	Julius Adams Stratton.....	Belmont
37	Jabez Curry Street.....	Belmont
50	Laszlo Tisza.....	Cambridge
50	Merle Antony Tuve.....	Washington, D. C.
28	Manuel Sandoval Vallarta.....	Mexico, D. F.
35	Robert Jemison Van de Graaff.....	Belmont
34	John Hasbrouck Van Vleck.....	Cambridge

35	Bertram Eugene Warren.....	Arlington
18	David Locke Webster.....	Palo Alto, Cal.
48	Victor Frederick Weisskopf.....	Cambridge
50	Eugene Paul Wigner.....	Princeton, N. J.
11	Edwin Bidwell Wilson.....	Brookline
13	Robert Williams Wood.....	Baltimore, Md.
49	Jerrold Reinach Zacharias.....	Cambridge
17	John Zeleny.....	New Haven, Conn.

CLASS I, SECTION 3—*Chemistry*—64

26	Roger Adams.....	Urbana, Ill.
44	Isadore Amdur.....	Cambridge
45	Eric Glendinning Ball.....	Newton Highlands
13	Wilder Dwight Bancroft.....	Ithaca, N. Y.
46	Paul Doughty Bartlett.....	Weston
07	Gregory Paul Baxter.....	Cambridge
29	James Alexander Beattie.....	Belmont
14	Marston Taylor Bogert.....	New York, N. Y.
49	William Clouser Boyd.....	Boston
38	Emile Monnin Chamot.....	Ithaca, N. Y.
42	Samuel Cornette Collins.....	Belmont
24	James Bryant Conant.....	Cambridge
45	Arthur Clay Cope.....	Belmont
48	Carl Ferdinand Cori.....	St. Louis, Mo.
48	Charles DuBois Coryell.....	Lexington
47	Paul Clifford Cross.....	Seattle, Wash.
37	John Tileston Edsall.....	Dedham
37	Gustavus John Esselen.....	Swampscott
33	Louis Frederick Fieser.....	Belmont
50	William Francis Giauque.....	Berkeley, Cal.
35	Louis Harris.....	Belmont
36	Albert Baird Hastings.....	Brookline
38	Robert Casad Hockett.....	Concord
36	Ernest Hamlin Huntress.....	Melrose Highlands
19	Frederick George Keyes.....	Cambridge
49	John Gamble Kirkwood.....	Pasadena, Cal.
33	George Bogdan Kistiakowsky.....	Cambridge
15	Charles August Kraus.....	Providence, R. I.
14	Arthur Becket Lamb.....	Brookline
18	Irving Langmuir.....	Schenectady, N. Y.
15	Warren Kendall Lewis.....	Newton
49	James Joseph Lingane.....	Cambridge
49	Fritz Albert Lipmann.....	Boston
50	Richard Collins Lord.....	Cambridge
23	Duncan Arthur MacInnes.....	New York, N. Y.

32	Kenneth Lamartine Mark.....	Boston
41	Charles Edward Kenneth Mees.....	Rochester, N. Y.
35	Nicholas Athanasius Milas.....	Belmont
36	Avery Adrian Morton.....	Watertown
19	Edward Mueller.....	Cambridge
49	John Howard Northrop.....	Berkeley, Cal.
31	William Albert Noyes, Jr.....	Rochester, N. Y.
45	John Lawrence Oncley.....	Newtonville
49	Lars Onsager.....	New Haven, Conn.
44	Linus Carl Pauling.....	Pasadena, Cal.
39	Clifford Burrough Purves.....	Montreal, Que.
49	Eugene Rochow.....	Cambridge
14	Martin André Rosanoff.....	Mt. Lebanon, Pa.
28	George Seatchard.....	Cambridge
32	Walter Cecil Schumb.....	East Milton
15	Miles Standish Sherrill.....	Brookline
34	Leighton Bruerton Smith.....	Beverly
49	Wendell Meredith Stanley.....	Berkeley, Cal.
47	Clark Conkling Stephenson.....	Cambridge
46	Walter Hugo Stockmayer.....	Weston
49	James Batcheller Sumner.....	Ithaca, N. Y.
43	Hugh Stott Taylor.....	Princeton, N. J.
38	Harold Clayton Urey.....	Chicago, Ill.
48	Vincent du Vigneaud.....	New York, N. Y.
11	Willis Rodney Whitney.....	Schenectady, N. Y.
19	Robert Seaton Williams.....	Belmont
44	Edgar Bright Wilson, Jr.....	Cambridge
48	Robert Burns Woodward.....	Cambridge
41	Ralph Chillingworth Young.....	Arlington

CLASS I, SECTION 4—*Technology and Engineering*—66

06	Comfort Avery Adams.....	Philadelphia, Pa.
42	Wilmer Lanier Barrow.....	Garden City, L. I., N. Y.
33	Harold Kilbrith Barrows.....	Winchester
31	Charles Harold Berry.....	Belmont
41	Edward Lindley Bowles.....	Wellesley
50	Gordon Stanley Brown.....	Cambridge
25	Vannevar Bush.....	Washington, D. C.
49	Arthur Casagrande.....	Cambridge
48	John Chipman.....	Winchester
49	Edward Lull Cochrane.....	Cambridge
50	Morris Cohen.....	Cambridge
45	Hardy Cross.....	New Haven, Conn.
34	Otto Gustav Colbiornsen Dahl.....	Boston
34	Chester Laurens Dawes.....	Cambridge

34	Jacob Pieter Den Hartog	Wellesley Hills
43	Bradley Dewey	Cambridge
20	Theodore Harwood Dillon	Washington, D. C.
41	Charles Stark Draper	Newton
22	Gano Dunn	New York, N. Y.
21	William Frederick Durand	Palo Alto, Cal.
46	Howard Wilson Emmons	Sudbury
27	Gordon Maskew Fair	Cambridge
48	Ivan Alexander Getting	Washington, D. C.
32	Glennon Gilboy	Lincoln
48	Edwin Richard Gilliland	Arlington
32	Albert Haertlein	Watertown
50	William Rede Hawthorne	Cambridge
40	Harold Locke Hazen	Belmont
44	Arthur Robert von Hippel	Weston
36	Murray Philip Horwood	Cambridge
48	Hoyt Clarke Hottel	Winchester
34	Jerome Clarke Hunsaker	Boston
49	Arthur Thomas Ippen	Cambridge
23	James Robertson Jack	Watertown
11	Dugald Caleb Jackson	Cambridge
01	Lewis Jerome Johnson	Cambridge
48	Theodore von Kármán	Azusa, Cal.
37	Joseph Henry Keenan	Belmont
50	Robert Victor Kleinschmidt	Cambridge
23	William Henry Lawrence	Jamaica Plain
38	John Moyes Lessells	Brookline
48	William Henry McAdams	Newton
37	Charles Winters MacGregor	Belmont
12	Lionel Simeon Marks	Cambridge
44	Richard von Mises	Cambridge
34	Edward Leyburn Moreland	Wellesley
49	John Torrey Norton	Cambridge
20	Frederick Law Olmsted	Elkton, Md.
28	Langdon Pearse	Chicago, Ill.
13	Harold Pender	Wynnewood, Pa.
30	Greenleaf Whittier Pickard	Newton Center
41	Reinhold Rüdenberg	Belmont
48	Thomas Kilgore Sherwood	Wellesley
50	Cyril Stanley Smith	Chicago, Ill.
39	C. Richard Soderberg	Weston
14	Charles Milton Spofford	Boston
49	Charles Fayette Taylor	Cambridge
49	Edward Story Taylor	Cambridge
[28]	44 Karl Terzaghi	Winchester
50	John George Trump	Cambridge

49	Hsue-Shen Tsien.....	Pasadena, Cal.
23	Edward Pearson Warner.....	Montreal, Que.
48	Walter Gordon Whitman.....	Concord
45	John Benson Wilbur.....	Belmont
40	John Wulff.....	Cambridge
41	Vladimir Kosma Zworykin.....	Princeton, N. J.

CLASS II—NATURAL AND PHYSIOLOGICAL SCIENCES—247

SECTION 1—*Geology, Mineralogy, and Physics of the Globe*—44

41	Alan Mara Bateman.....	New Haven, Conn.
46	Roland Frank Beers.....	Dallas, Texas
38	Marland Pratt Billings.....	Wellesley
21	Norman Levi Bowen.....	Washington, D. C.
49	Wilmot Hyde Bradley.....	Washington, D. C.
33	Charles Franklin Brooks.....	Milton
49	Walter Herman Bucher.....	New York, N. Y.
48	Arthur Francis Buddington.....	Princeton, N. J.
45	Martin Julian Burgerer.....	Lincoln
33	Frank Morton Carpenter.....	Lexington
50	Carl Owen Dunbar.....	New Haven, Conn.
49	Clifford Frondel.....	Cambridge
42	Russell Gibson.....	Belmont
49	James Gilluly.....	Los Angeles, Cal.
14	Louis Caryl Graton.....	Cambridge
17	Herbert Ernest Gregory.....	Honolulu, T. H.
50	Beno Gutenberg.....	Pasadena, Cal.
50	Donnel Foster Hewett.....	Pasadena, Cal.
46	Cornelius Searle Hurlbut, Jr.....	Belmont
44	Columbus O'Donnell Iselin.....	Woods Hole
02	Thomas Augustus Jaggar.....	Honolulu, T. H.
48	Adolph Knopf.....	New Haven, Conn.
25	Esper Signius Larsen, Jr.....	Arlington, Va.
15	Andrew Cowper Lawson.....	Berkeley, Cal.
16	Charles Kenneth Leith.....	Madison, Wis.
50	Arville Irving Levorsen.....	Stanford, Cal.
31	George Francis McEwen.....	La Jolla, Cal.
49	Hugh Exton McKinstry.....	Cambridge
27	Donald Hamilton McLaughlin.....	San Francisco, Cal.
25	Kirtley Fletcher Mather.....	Newton Center
35	Warren Judson Mead.....	Belmont
17	William John Miller.....	Stockton, Cal.
32	Frederick Kuhne Morris.....	Montgomery, Ala.
34	Walter Harry Newhouse.....	Chicago, Ill.
50	Thomas Brennan Nolan.....	Washington, D. C.
22	Austin Flint Rogers.....	Palo Alto, Cal.

34	Carl-Gustaf Arvid Rossby.....	Chicago, Ill.
19	Waldemar Theodore Schaller.....	Washington, D. C.
48	George Gaylord Simpson.....	New York, N. Y.
45	Henry Crosby Stetson.....	Belmont
44	Harald Ulrik Sverdrup.....	Oslo, Norway
17	Thomas Wayland Vaughan.....	Washington, D. C.
35	Derwent Stainthorpe Whittlesey.....	Cambridge
15	Frederick Eugene Wright.....	Washington, D. C.

CLASS II, SECTION 2—*Botany*—42

30	LeRoy Abrams.....	Palo Alto, Cal.
34	Edgar Anderson.....	St. Louis, Mo.
15	Irving Widmer Bailey.....	Cambridge
00	Liberty Hyde Bailey.....	Ithaca, N. Y.
50	Elso Sterrenberg Barghoorn.....	Cambridge
49	Lawrence Rogers Blinks.....	Pacific Grove, Cal.
98	Douglas Houghton Campbell.....	Palo Alto, Cal.
48	Edward Sears Castle.....	Cambridge
49	Jens Christian Clausen.....	Stanford, Cal.
46	Ralph Erskine Cleland.....	Bloomington, Ind.
50	Lincoln Constance.....	Berkeley, Cal.
16	Bradley Moore Davis.....	Portland, Ore.
35	Bernard Ogilvie Dodge.....	New York, N. Y.
41	Arthur Johnson Eames.....	Ithaca, N. Y.
49	Katherine Esau.....	Davis, Cal.
12	Alexander William Evans.....	New Haven, Conn.
50	Adriance Sherwood Foster.....	Berkeley, Cal.
44	Paul Rupert Gast.....	Weston
27	Ivan Murray Johnston.....	Jamaica Plain
34	Donald Forsha Jones.....	New Haven, Conn.
40	Paul Christoph Mangelsdorf.....	Cambridge
10	Winthrop John Vanleuven Osterhout.....	New York, N. Y.
27	George James Peirce.....	Palo Alto, Cal.
49	Kenneth Bryan Raper.....	Peoria, Ill.
44	Hugh Miller Raup.....	Petersham
48	William Jacob Robbins.....	New York, N. Y.
49	Reed Clark Rollins.....	Cambridge
34	Edmund Ware Sinnott.....	New Haven, Conn.
44	Albert Charles Smith.....	Washington, D. C.
34	Gilbert Morgan Smith.....	Palo Alto, Cal.
45	Herman Augustus Spoehr.....	Palo Alto, Cal.
49	Lewis John Stadler.....	Columbia, Mo.
23	Elvin Charles Stakman.....	St. Paul, Minn.
48	William Randolph Taylor.....	Ann Arbor, Mich.
38	Kenneth Vivian Thimann.....	Cambridge

50	Cornelis Bernardus Van Niel.....	Pacific Grove, Cal.
49	Selman Abraham Waksman.....	New Brunswick, N. J.
48	Frits Warmolt Went.....	Pasadena, Cal.
22	William Henry Weston, Jr.....	Winchester
32	Ralph Hartley Wetmore.....	Cambridge
50	Philip Rodney White.....	Philadelphia, Pa.
50	William Lawrence White.....	Cambridge

CLASS II, SECTION 3—*Zoology and Physiology*—83

50	Warder Clyde Allee.....	Gainesville, Fla.
49	Edwin Bennett Astwood.....	Boston
22	Nathan Banks.....	Holliston
33	Philip Bard.....	Baltimore, Md.
09	Francis Gano Benedict.....	Machiasport, Me.
11	Henry Bryant Bigelow.....	Concord
14	Robert Payne Bigelow.....	Brookline
35	Charles Henry Blake.....	Lincoln
20	William T. Bovie.....	Fairfield, Me.
24	Edward Allen Boyden.....	Minneapolis, Minn.
16	John Lewis Bremer.....	Boston
28	John Wymond Miller Bunker.....	Belmont
00	William Ernest Castle.....	Berkeley, Cal.
29	Lemuel Roscoe Cleveland.....	Jamaica Plain
26	Edwin Joseph Cohn.....	Cambridge
14	Edwin Grant Conklin.....	Princeton, N. J.
23	Manton Copeland.....	Brunswick, Me.
27	William John Crozier.....	Belmont
29	Hallowell Davis.....	St. Louis, Mo.
33	Alden Benjamin Dawson.....	Belmont
49	Edward Wheeler Dempsey.....	St. Louis, Mo.
25	Samuel Randall Detwiler.....	New York, N. Y.
43	David Bruce Dill.....	Army Medical Center, Md.
48	Edward Adelbert Doisy.....	St. Louis, Mo.
50	Leslie Clarence Dunn.....	New York, N. Y.
25	Herbert McLean Evans.....	Berkeley, Cal.
48	Wallace Osgood Fenn.....	Rochester, N. Y.
34	Cyrus Hartwell Fiske.....	Lexington
34	John Farquhar Fulton.....	New Haven, Conn.
48	Herbert Spencer Gasser.....	New York, N. Y.
47	Arnold Lucius Gesell.....	New Haven, Conn.
50	Roy Orval Greep.....	Boston
31	William King Gregory.....	New York, N. Y.
48	Edmund Newton Harvey.....	Princeton, N. J.
36	Frederick Lee Hisaw.....	Belmont
29	Leigh Hoadley.....	Cambridge
34	Hudson Hoagland.....	Shrewsbury

24	Samuel Jackson Holmes.....	Berkeley, Cal.
28	Roy Graham Hoskins.....	Waban
49	George Evelyn Hutchinson.....	New Haven, Conn.
49	Otto Krayner.....	Cambridge
44	Eugene Markley Landis.....	Brookline
16	Frederic Thomas Lewis.....	Waban
14	Ralph Stayner Lillie.....	Chicago, Ill.
49	Cyril Norman Hugh Long.....	New Haven, Conn.
45	John Robert Loofbourow.....	Cambridge
17	Richard Swann Lull.....	New Haven, Conn.
43	Brenton Reid Lutz.....	Melrose
27	Axel Leonard Melander.....	Riverside, Cal.
35	Karl Friedrich Meyer.....	San Francisco, Cal.
21	Gerrit Smith Miller.....	Washington, D. C.
50	Carl Richard Moore.....	Chicago, Ill.
42	Hermann Joseph Muller.....	Bloomington, Ind.
49	John Spangler Nicholas.....	New Haven, Conn.
95	George Howard Parker.....	Cambridge
46	James Lee Peters.....	Harvard
21	Henry Augustus Pilsbry.....	Philadelphia, Pa.
39	Gregory Pincus.....	Worcester
50	Harold Henry Plough.....	Amherst
27	Frederick Haven Pratt.....	Wellesley Hills
09	Herbert Wilbur Rand.....	Cambridge
32	David Rapport.....	Cambridge
23	Alfred Clarence Redfield.....	Woods Hole
34	Alfred Newton Richards.....	Bryn Mawr, Pa.
34	Oscar Riddle.....	Plant City, Fla.
46	Kenneth David Roeder.....	Concord
37	Alfred Sherwood Romer.....	Cambridge
25	Alexander Grant Ruthven.....	Ann Arbor, Mich.
41	Francis Otto Schmitt.....	Belmont
49	Homer William Smith.....	New York, N. Y.
49	Tracy Morton Sonneborn.....	Bloomington, Ind.
49	Alfred Henry Sturtevant.....	Pasadena, Cal.
48	Hubert Bradford Vickery.....	New Haven, Conn.
48	George Wald.....	Belmont
45	John Henry Welsh, Jr.....	Cambridge
15	Arthur Wisswald Weyse.....	Woburn
49	James Walter Wilson.....	Providence, R. I.
38	George Bernays Wislocki.....	Milton
48	Sewall Wright.....	Chicago, Ill.
50	Ralph Walter Graystone Wyckoff.....	Bethesda, Md.
33	Jeffries Wyman, Jr.....	Chestnut Hill
45	Leland Clifton Wyman.....	Jamaica Plain
15	Robert Mearns Yerkes.....	New Haven, Conn.

CLASS II, SECTION 4—*Medicine and Surgery*—78

41	Fuller Albright.....	Brookline
47	Arthur Wilburn Allen.....	Brookline
32	Joseph Charles Aub.....	Belmont
36	Oswald Theodore Avery.....	Nashville, Tenn.
29	James Bourne Ayer.....	Milton
(28)	32 Franklin Greene Balch.....	Jamaica Plain
41	Walter Bauer.....	Waban
47	David Lawrence Belding.....	Hingham
50	George Packer Berry.....	Boston
48	Francis Gilman Blake.....	New Haven, Conn.
31	George Blumer.....	San Marino, Cal.
49	Herrman Ludwig Blumgart.....	Boston
43	Arlie Vernon Bock.....	Cambridge
36	Charles Sidney Burwell.....	Brookline
48	Allan Macy Butler.....	Boston
31	William Bosworth Castle.....	Brookline
30	David Cheever.....	Boston
13	Henry Asbury Christian.....	Brookline
48	Edward Delos Churchill.....	Belmont
42	William Irving Clark.....	Worcester
49	David Glendenning Cogan.....	Cambridge
21	Rufus Cole.....	Mount Kisco, N. Y.
50	Oliver Cope.....	Boston
50	Lewis Dexter.....	Boston
31	Eugene Floyd DuBois.....	New York, N. Y.
50	Geoffrey Edsall.....	Boston
46	John Franklin Enders.....	Boston
49	Sidney Farber.....	Cambridge
45	James Morison Faulkner.....	Brookline
44	Maxwell Finland.....	Squantum
33	Reginald Fitz.....	Brookline
27	James Lawder Gamble.....	Brookline
22	Joseph Lincoln Goodale.....	Ipswich
49	Harry Sylvestre Nutting Greene.....	New Haven, Conn.
49	Robert Edward Gross.....	Boston
21	Ross Granville Harrison.....	New Haven, Conn.
49	Arthur Tremain Hertig.....	Cambridge
47	Sanford Burton Hooker.....	West Roxbury
49	Charles Brenton Huggins.....	Chicago, Ill.
33	Edgar Erskine Hume.....	Frankfort, Ky.
34	Henry Jackson, Jr.....	Chestnut Hill
46	Charles Alderson Janeway.....	Weston
12	Elliott Proctor Joslin.....	Boston
43	Chester Scott Keefer.....	Brookline

23	Roger Irving Lee	Brookline
42	Samuel Albert Levine	Newton Center
29	Edwin Allen Locke	Wilton, N. H.
49	Robert Frederick Loeb	New York, N. Y.
28	Warfield Theobald Longeope	Baltimore, Md.
40	William de Berniere MacNider	Chapel Hill, N. C.
44	William Malamud	Boston
[27]	50 James Howard Means	Boston
34	Leroy Matthew Simpson Miner	Newtonville
28	William Lorenzo Moss	Athens, Ga.
28	John Howard Mueller	West Roxbury
50	Ira Theodore Nathanson	Boston
27	Joseph Hersey Pratt	Brookline
50	Samuel Proger	Boston
35	Tracy Jackson Putnam	Los Angeles, Cal.
34	William Carter Quinby	Brookline
47	Francis Minot Rackemann	Boston
48	John Rock	Roslindale
34	Arthur Hiler Ruggles	Providence, R. I.
39	William Thomas Salter	New Haven, Conn.
33	George Cheever Shattuck	Brookline
47	James Stevens Simmons	Boston
47	Richard Mason Smith	Boston
50	John Crayton Snyder	Boston
30	Torald Hermann Sollmann	Cleveland, O.
47	Merrill Clary Sosman	Chestnut Hill
46	Siegfried Josef Thannhauser	Brookline
44	George Widmer Thorn	Cambridge
14	Ernest Edward Tyzzer	Wakefield
14	Frederick Herman Verhoeff	Brookline
47	Shields Warren	West Newton
27	Joseph Treloar Wearn	Cleveland, O.
40	Paul Dudley White	Brookline
12	Simeon Burt Wolbach	South Sudbury

CLASS III—THE SOCIAL ARTS—204

SECTION 1—*Jurisprudence*—36

(24)	32 Francis Noyes Balch	Jamaica Plain
36	Stoughton Bell	Cambridge
36	Claude Raymond Branch	Boston
50	Zechariah Chafee, Jr.	Cambridge
48	Charles Allerton Coolidge	Belmont
49	John Cobb Cooper	Princeton, N. J.
33	John Dickinson	Philadelphia, Pa.

38	Robert Gray Dodge.....	Boston
40	Lon Louvois Fuller.....	Cambridge
39	Herbert Funk Goodrich.....	Philadelphia, Pa.
33	Theodore Francis Green.....	Providence, R. I.
38	Frank Washburn Grinnell.....	Boston
41	Erwin Nathaniel Griswold.....	Belmont
39	John Loomer Hall.....	Boston
39	Augustus Noble Hand.....	New York, N. Y.
33	Learned Hand.....	New York, N. Y.
39	Albert James Harno.....	Urbana, Ill.
49	Charles Antone Horsky.....	Washington, D. C.
47	Mark DeWolfe Howe.....	Cambridge
38	Melvin Maynard Johnson.....	Brookline
49	Phillips Ketchum.....	Cambridge
38	James McCauley Landis.....	Washington, D. C.
32	Sayre Maeneil.....	Los Angeles, Cal.
32	Calvert Magruder.....	Cambridge
50	Thomas Harrison Mahony.....	Boston
31	William DeWitt Mitchell.....	New York, N. Y.
31	Edmund Morris Morgan.....	Nashville, Tenn.
47	John Lord O'Brian.....	Washington, D. C.
36	Henry Parkman, Jr.....	Boston
01	George Wharton Pepper.....	Philadelphia, Pa.
11	Roscoe Pound.....	Watertown
36	Stanley Elroy Qua.....	Lowell
32	Francis Bowes Sayre.....	Washington, D. C.
21	Austin Wakeman Scott.....	Cambridge
39	Thomas Walter Swan.....	New York, N. Y.
43	Charles Edward Wyzanski, Jr.....	Cambridge

CLASS III, SECTION 2—*Government, International Law, and Diplomacy*—36

36	Howard Landis Bevis.....	Columbus, O.
33	Edwin Montefiore Borchard.....	New Haven, Conn.
46	Harvey Hollister Bundy.....	Boston
40	Robert Granville Caldwell.....	Buenos Aires, Argentina
32	William Richards Castle, Jr.....	Washington, D. C.
32	Joseph Perkins Chamberlain.....	New York, N. Y.
48	William Lockhart Clayton.....	Houston, Tex.
33	Robert Treat Crane.....	Baltimore, Md.
50	Saville Rogers Davis.....	Boston
46	John Sloan Dickey.....	Hanover, N. H.
50	Paul Howard Douglas.....	Washington, D. C.
50	Merle Fainsod.....	Cambridge
27	William Cameron Forbes.....	Norwood
44	Carl Joachim Friedrich.....	Concord

50	James William Fulbright.....	Washington, D. C.
34	Edgar Stephenson Furniss.....	New Haven, Conn.
50	John Merriman Gaus.....	Cambridge
49	Leland Matthew Goodrich.....	New York, N. Y.
32	Joseph Clark Grew.....	Washington, D. C.
50	Christian Archibald Herter.....	Washington, D. C.
41	Hajo Holborn.....	Hamden, Conn.
27	Arthur Norman Holcombe.....	Cambridge
32	Philip Carryl Jessup.....	New York, N. Y.
49	Walter Lippmann.....	Washington, D. C.
32	Charles Edward Merriam.....	Chicago, Ill.
13	William Bennett Munro.....	Pasadena, Cal.
47	William Phillips.....	North Beverly
41	Gaetano Salvemini.....	Cambridge
46	Robert Burgess Stewart.....	Winchester
44	Sarah Wambaugh.....	Cambridge
47	Sumner Welles.....	Oxon Hill, Md.
32	William Franklin Willoughby.....	Washington, D. C.
14	George Grafton Wilson.....	Grafton, Vt.
48	Howard Eugene Wilson.....	New York, N. Y.
27	Quincy Wright.....	Chicago, Ill.
33	Henry Aaron Yeomans.....	Harvard

CLASS III, SECTION 3—*Economics and Sociology*—58

36	James Waterhouse Angell.....	New York, N. Y.
47	George Pierce Baker.....	Boston
48	Richard Mervin Bissell, Jr.....	Washington, D. C.
36	James Cummings Bonbright.....	New York, N. Y.
43	Augusta Fox Bronner (Mrs. William Healy).....	Clearwater, Fla.
44	Douglass Vincent Brown.....	Brookline
46	Theodore Henry Brown.....	Cambridge
33	Harold Hitchings Burbank.....	Cambridge
34	John Maurice Clark.....	Westport, Conn.
28	Arthur Harrison Cole.....	Cambridge
21	Clive Day.....	New Haven, Conn.
32	Arthur Stone Dewing.....	Newton
41	Carl Rupp Doering.....	Norman, Okla.
32	Wallace Brett Donham.....	Cambridge
36	Fred Rogers Fairchild.....	Hamden, Conn.
34	Ralph Evans Freeman.....	Cambridge
33	Sheldon Glueck.....	Cambridge
50	Carter Goodrich.....	New York, N. Y.
34	Robert Murray Haig.....	New York, N. Y.
41	Earl Jefferson Hamilton.....	Evanston, Ill.
45	Seymour Edwin Harris.....	West Acton

49	(Edward) Pendleton Herring	New York, N. Y.
48	Bishop Carleton Hunt	Norwell
34	Frank Hyneman Knight	Chicago, Ill.
36	Roswell Cheney McCrea	New York, N. Y.
34	Robert Morison MacIver	New York, N. Y.
32	Walter Wallace McLaren	Englewood Cliffs, N. J.
45	William Rupert Maclaurin	Cambridge
36	Malcolm Perrine McNair	Cambridge
32	Leon Carroll Marshall	Chevy Chase, Md.
50	Mark Arthur May	New Haven, Conn.
34	Richard Stockton Meriam	South Lincoln
50	Robert King Merton	New York, N. Y.
32	Frederick Cecil Mills	New York, N. Y.
34	Arthur Eli Monroe	Cambridge
34	Edwin Griswold Nourse	Chevy Chase, Md.
32	William Fielding Ogburn	Chicago, Ill.
45	Talcott Parsons	Belmont
42	William Andrew Paton	Ann Arbor, Mich.
47	Fritz Jules Roethlisberger	Cambridge
37	Clyde Orval Ruggles	Cambridge
42	Paul Anthony Samuelson	Belmont
36	Thomas Henry Sanders	Cambridge
43	Benjamin Morris Selekman	Cambridge
31	Pitirim Alexandrovich Sorokin	Winchester
31	Oliver Mitchell Wentworth Sprague	Cambridge
46	Harold Walter Stoke	Baton Rouge, La.
50	Samuel Andrew Stouffer	Cambridge
49	Philip Taft	Providence, R. I.
37	Harry Rudolph Tosdal	Belmont
31	Donald Skeele Tucker	Belmont
41	Robert Ulich	Cambridge
34	Jacob Viner	Princeton, N. J.
38	T[homas] North Whitehead	Cambridge
32	John Henry Williams	Cambridge
36	Joseph Henry Willits	New York, N. Y.
34	Leo Wolman	New York, N. Y.
34	Carle Clark Zimmerman	Winchester

CLASS III, SECTION 4—*Administration and Affairs*—74

(25) 32	Charles Francis Adams	Concord
46	Chester M. Alter	West Newton
39	Chester Irving Barnard	New York, N. Y.
(25) 32	Charles Foster Batchelder	Peterborough, N. H.
49	Bancroft Beatley	Boston
44	Adolf Augustus Berle, Jr.	New York, N. Y.

50	Barry Bingham.....	Louisville, Ky.
49	S(amuel) Bruce Black.....	Boston
49	Lloyd DeW. Brace.....	Boston
49	Detlev Wulf Bronk.....	Baltimore, Md.
49	Oliver Ellsworth Buckley.....	New York, N. Y.
50	John Ely Burchard.....	Cambridge
45	Edwin Sharp Burdell.....	New York, N. Y.
50	Victor Lloyd Butterfield.....	Middletown, Conn.
41	Godfrey Lowell Cabot.....	Boston
47	Thomas Dudley Cabot.....	Weston
48	Erwin Dain Canham.....	Newton
47	William Henry Claflin, Jr.....	Belmont
49	Paul Foster Clark.....	Boston
48	Charles Woolsey Cole.....	Amherst
43	Ada Louise Comstock (Mrs. Wallace Notestein).....	New Haven, Conn.
50	William Terry Couch.....	Chicago, Ill.
48	Robert Cutler.....	Boston
42	Donald Kirk David.....	Boston
38	Edmund Ezra Day.....	Ithaca, N. Y.
32	Henry Sturgis Dennison.....	Framingham
50	Charles Dollard.....	New York, N. Y.
46	David Frank Edwards.....	Cambridge
48	Carl Stephens Ell.....	Newton
49	John Wells Farley.....	Boston
(28)	32 William Lusk Webster Field.....	Milton
39	Ralph Edward Flanders.....	Springfield, Vt.
38	Horace Sayford Ford.....	Belmont
44	Raymond Blaine Fosdick.....	New York, N. Y.
48	Francis Calley Gray.....	Boston
50	Alan Gregg.....	New York, N. Y.
50	William Averell Harriman.....	Washington, D. C.
49	Harold Daniel Hodgkinson.....	Boston
44	Ernest Martin Hopkins.....	Hanover, N. H.
48	Carl Tilden Keller.....	Boston
34	Henry Plimpton Kendall.....	Sharon
44	James Rhyne Killian, Jr.....	Wellesley Hills
39	Morris Evans Leeds.....	Philadelphia, Pa.
48	David Eli Lilienthal.....	Washington, D. C.
34	Clarence Cook Little.....	Bar Harbor, Me.
47	Ralph Lowell.....	Westwood
49	Louis Martin Lyons.....	Cambridge
36	Dumas Malone.....	New York, N. Y.
42	Daniel L. Marsh.....	Boston
45	Keyes DeWitt Metcalf.....	Belmont
45	Henry Allen Moe.....	New York, N. Y.
02	Herbert Putnam.....	Washington, D. C.

50	Helen Rogers Reid.....	New York, N. Y.
49	Arthur Grinnell Rotch.....	Boston
34	Erwin Haskell Schell.....	Cambridge
38	Charles Seymour.....	New Haven, Conn.
35	Henry Lee Shattuck.....	Boston
37	Henry Southworth Shaw.....	Melrose
50	George Nauman Shuster.....	New York, N. Y.
48	Alfred Pritchard Sloan, Jr.....	New York, N. Y.
49	George A. Sloan.....	New York, N. Y.
(28)	32 Payson Smith.....	Orono, Me.
46	Huntley Nowell Spaulding.....	Rochester, N. H.
33	Albert Warren Stearns.....	Billerica
50	Arthur Hays Sulzberger.....	New York, N. Y.
50	William Webster.....	Washington, D. C.
49	Carroll Louis Wilson.....	Washington, D. C.
44	Charles Edward Wilson.....	New York, N. Y.
50	Thomas James Wilson.....	Cambridge
41	Laurence Leathe Winship.....	South Sudbury
50	Benjamin Fletcher Wright.....	Northampton
48	Henry Merritt Wriston.....	Providence, R. I.
(25)	32 Benjamin Loring Young.....	Weston
39	Owen D. Young.....	New York, N. Y.

CLASS IV—THE HUMANITIES—207

SECTION 1—*Theology, Philosophy, and Psychology*—47

32	Michael Joseph Ahern.....	Weston
33	John Gilbert Beebe-Center.....	Swampscott
38	Julius Seelye Bixler.....	Waterville, Me.
46	Brand Blanshard.....	New Haven, Conn.
24	Edwin Garrigues Boring.....	Cambridge
28	Edgar Sheffield Brightman.....	Newton
31	Henry Addington Bruce.....	Cambridge
49	Millar Burrows.....	New Haven, Conn.
32	Leonard Carmichael.....	Tufts College
48	Rudolph Carnap.....	Chicago, Ill.
36	Robert Pierce Casey.....	Providence, R. I.
33	Curt John Ducasse.....	Providence, R. I.
43	Angus Dun.....	Washington, D. C.
48	Frederick May Eliot.....	Cambridge
38	James Everett Frame.....	Princeton, N. J.
37	Clarence Henry Graham.....	New York, N. Y.
45	Edwin Ray Guthrie.....	Seattle, Wash.
32	William Healy.....	Clearwater, Fla.
35	Clark Leonard Hull.....	New Haven, Conn.
28	Albert Cornelius Knudson.....	Cambridge

50	John LaFarge.....	New York, N. Y.
32	Karl Spencer Lashley.....	Orange Park, Fla.
29	Clarence Irving Lewis.....	Lexington
42	Richard Peter McKeon.....	Chicago, Ill.
48	Arthur Edward Murphy.....	Ithaca, N. Y.
50	Gardner Murphy.....	New York, N. Y.
35	Henry Alexander Murray, Jr.....	Boston
47	Norman Burdett Nash.....	Boston
32	Arthur Darby Nock.....	Cambridge
28	Johnson O'Connor.....	Boston
17	Charles Edwards Park.....	Boston
33	Carroll Cornelius Pratt.....	Princeton, N. J.
49	Willard Van Orman Quine.....	Cambridge
48	Hans Reichenbach.....	Los Angeles, Cal.
50	Herbert Wallace Schneider.....	New York, N. Y.
31	Henry Knox Sherrill.....	New York, N. Y.
27	Willard Learoyd Sperry.....	Cambridge
29	Russell Henry Stafford.....	Hartford, Conn.
46	Stanley Smith Stevens.....	Cambridge
48	Alfred Tarski.....	Berkeley, Cal.
45	Charles Lincoln Taylor, Jr.....	Cambridge
34	Lewis Madison Terman.....	Palo Alto, Cal.
27	Louis Leon Thurstone.....	Chicago, Ill.
50	Paul Johannes Tillich.....	New York, N. Y.
49	Edward Chace Tolman.....	Berkeley, Cal.
17	John Broadus Watson.....	Woodbury, Conn.
35	Robert Sessions Woodworth.....	New York, N. Y.

CLASS IV, SECTION 2—*History, Archaeology, and Anthropology*—47

41	Warren Ortman Ault.....	Waban
28	James Phinney Baxter, 3d.....	Williamstown
50	Herbert Bloch.....	Cambridge
49	Julian Parks Boyd.....	Princeton, N. J.
46	Clarence Saunders Brigham.....	Worcester
42	Henry Joel Cadbury.....	Cambridge
50	Helen Maud Cam.....	Cambridge
34	Clarence Gordon Campbell.....	New York, N. Y.
49	Gilbert Chinard.....	Princeton, N. J.
43	Carleton Stevens Coon.....	Devon, Pa.
49	Merle (Eugene) Curti.....	Madison, Wis.
44	William Bell Dinsmoor.....	New York, N. Y.
38	Claude Moore Fuess.....	Chestnut Hill
50	Hetty Goldman.....	Princeton, N. J.
50	Louis Gottschalk.....	Chicago, Ill.
49	Mason Hammond.....	Cambridge

49	James Blaine Hedges.....	Providence, R. I.
43	Hugh O'Neill Hencken.....	Chestnut Hill
14	Bert Hodge Hill.....	Athens, Greece
27	Earnest Albert Hooton.....	Cambridge
33	Halford Lancaster Hoskins.....	Washington, D. C.
47	Wilbur Kitchener Jordan.....	Cambridge
50	Michael Karpovich.....	Cambridge
44	Clyde Kay Maben Kluckhohn.....	Cambridge
12	Alfred Louis Kroeber.....	Berkeley, Cal.
44	Ambrose Lansing.....	New York, N. Y.
49	Kenneth Scott Latourette.....	New Haven, Conn.
32	Waldo Gifford Leland.....	Newton
41	William E. Lingelbach.....	Philadelphia, Pa.
50	Ralph Linton.....	New Haven, Conn.
48	Margaret Mead.....	New York, N. Y.
38	Stewart Mitchell.....	Boston
15	Samuel Eliot Morison.....	Boston
46	Otto Eduard Neugebauer.....	Providence, R. I.
34	Robert Henry Pfeiffer.....	Cambridge
50	Conyers Read.....	Philadelphia, Pa.
50	Robert Redfield.....	Chicago, Ill.
34	David Moore Robinson.....	University, Miss.
23	Michael Ivanovich Rostovtzeff.....	New Haven, Conn.
27	George Sarton.....	Cambridge
38	Bernadotte Everly Schmitt.....	Alexandria, Va.
36	Donald Scott.....	Cambridge
49	Richard Harrison Shryock.....	Baltimore, Md.
26	Herbert Joseph Spinden.....	Brooklyn, N. Y.
32	Charles Holt Taylor.....	Cambridge
11	Alfred Marston Tozzer.....	Cambridge
39	Henry Rouse Viets.....	Brookline

CLASS IV, SECTION 3—*Philology*—46

48	Bernard Bloch.....	New Haven, Conn.
33	Campbell Bonner.....	Ann Arbor, Mich.
41	Giuseppe Antonio Borgese.....	Chicago, Ill.
21	Carl Darling Buck.....	Chicago, Ill.
49	Oscar James Campbell.....	New York, N. Y.
48	Yuen Ren Chao.....	Berkeley, Cal.
20	Walter Eugene Clark.....	La Jolla, Cal.
46	George Raleigh Coffman.....	Chapel Hill, N. C.
32	Ronald Salmon Crane.....	Chicago, Ill.
44	Henry Grattan Doyle.....	Washington, D. C.
20	Franklin Edgerton.....	New Haven, Conn.
40	Serge Elisséeff.....	Cambridge

14	Jeremiah Denis Mathias Ford	Cambridge
16	Louis Herbert Gray	New York, N. Y.
25	William Chase Greene	Cambridge
13	Charles Burton Gulick	Scarsdale, N. Y.
31	Raymond Dexter Havens	Baltimore, Md.
18	George Lincoln Hendrickson	New Haven, Conn.
40	Werner Wilhelm Jaeger	Watertown
50	Roman Jakobson	Cambridge
32	(Ralph) Hayward Keniston	Ann Arbor, Mich.
34	Roland Grubb Kent	Wynnewood, Pa.
33	Hans Kurath	Ann Arbor, Mich.
39	Henry Carrington Lancaster	Baltimore, Md.
50	Harry Tuchman Levin	Cambridge
33	Ivan Mortimer Linforth	Berkeley, Cal.
44	Elias Avery Lowe	Princeton, N. J.
35	Benjamin Dean Meritt	Princeton, N. J.
28	William Albert Nitze	Los Angeles, Cal.
32	George Rapall Noyes	Berkeley, Cal.
33	Howard Rollin Patch	Northampton
11	Fred Norris Robinson	Cambridge
38	Hyder Edward Rollins	Cambridge
35	Henry Arthur Sanders	Ann Arbor, Mich.
43	Jean Joseph Seznec	Cambridge
45	George Wiley Sherburn	Cambridge
50	Charles Southward Singleton	Cambridge
45	Taylor Starck	Cambridge
49	Archer Taylor	Berkeley, Cal.
32	William Thomson	South Lincoln
11	Charles Cutler Torrey	New Haven, Conn.
47	William Freeman Twaddell	Springfield
48	Berthold Louis Ullman	Chapel Hill, N. C.
30	Ernest Hatch Wilkins	Newton Center
33	Harry Austryn Wolfson	Cambridge
49	Louis Booker Wright	Washington, D. C.

CLASS IV, SECTION 4—*The Fine Arts and Belles Lettres*—67

43	Leonard Bacon	Peace Dale, R. I.
26	Frank Weston Benson	Salem
50	E. Power Biggs	Cambridge
32	(William) Welles Bosworth	Locust Valley, N. Y.
49	Van Wyck Brooks	Bridgewater, Conn.
50	John Nicholas Brown	Providence, R. I.
47	Richard Burgin	Brookline
42	John Nash Douglas Bush	Cambridge
33	John Alden Carpenter	Carmel, Cal.

45	Samuel Chamberlain	Marblehead
32	Chalmers Daney Clifton	New York, N. Y.
49	Robert Peter Tristram Coffin	Brunswick, Me.
32	Kenneth John Conant	Cambridge
46	William George Constable	Cambridge
49	Bernard Augustine DeVoto	Cambridge
47	John Roderigo Dos Passos	Provincetown
49	William Addison Dwiggins	Hingham
32	George Harold Edgell	Cambridge
21	William Emerson	Cambridge
30	John Erskine	New York, N. Y.
50	Luther Harris Evans	Washington, D. C.
18	Edward Waldo Forbes	Cambridge
49	Esther Forbes	Worcester
31	Robert Frost	Ripton, Vt.
27	Wallace Goodrich	Manchester
44	Walter Gropius	Lincoln
48	Bartlett Harding Hayes, Jr.	Andover
31	Robert Silliman Hillyer	Greenwich, Conn.
27	Charles Hopkinson	Manchester
12	Mark Antony DeWolfe Howe	Boston
38	Joseph Hudnut	Cambridge
18	Archer Milton Huntington	New York, N. Y.
50	William Mills Ivins, Jr.	Woodbury, Conn.
45	William Alexander Jackson	Cambridge
38	Howard Mumford Jones	Cambridge
42	Otto Kinkeldey	New York, N. Y.
49	Jack Levine	New York, N. Y.
47	Milton Edward Lord	Boxford
50	Archibald MacLeish	Cambridge
21	Charles Donagh Maginnis	Brookline
49	Thomas Mann	Pacific Palisades, Cal.
31	Paul Manship	New York, N. Y.
48	John Marin	Cliffside Park, N. J.
31	Daniel Gregory Mason	New York, N. Y.
31	Frank Jewett Mather	Princeton, N. J.
44	Charles Rufus Morey	Rome, Italy
47	Lewis Mumford	New York, N. Y.
50	Charles Munch	Boston
48	Thomas Munro	Cleveland, O.
31	Kenneth Ballard Murdock	Boston
48	Erwin Panofsky	Princeton, N. J.
(24)	32 Anthony John Philpott	Arlington
41	Walter Hamor Piston, Jr.	Belmont
49	Lucien Price	Boston
22	Paul Joseph Sachs	Cambridge

50 Charles Henry Sawyer.....	New Haven, Conn.
14 Ellery Sedgwick.....	Beverly
19 Henry Dwight Sedgwick.....	Dedham
48 Bruce Simonds.....	Hamden, Conn.
48 John Sloan.....	New York, N. Y.
39 Francis Henry Taylor.....	New York, N. Y.
43 Randall Thompson.....	Cambridge
44 Karl Viëtor.....	Cambridge
45 Martin Wagner.....	Cambridge
46 Edward Augustus Weeks, Jr.....	Boston
39 Karl Ephraim Weston.....	Williamstown
46 William Wilson Wurster.....	San Francisco, Cal.

FELLOWS EMERITI—52

CLASS I—MATHEMATICAL AND PHYSICAL SCIENCES—10

CLASS I, SECTION 1—2

15 Frank Lauren Hitchcock.....	Belmont
[12] 44 Frederick Shenstone Woods.....	Newton Center

CLASS I, SECTION 2—2

39 Lyman James Briggs.....	Washington, D. C.
12 Maurice deKay Thompson.....	Boston

CLASS I, SECTION 3—4

19 Arthur Alphonso Blanchard.....	Brookline
40 William Lloyd Evans.....	Columbus, O.
15 George Shannon Forbes.....	Cambridge
14 Samuel Cate Prescott.....	Brookline

CLASS I, SECTION 4—2

32 Ralph Restieaux Lawrence.....	Belmont
30 George Edmond Russell.....	Lexington

CLASS II—NATURAL AND PHYSIOLOGICAL SCIENCES—14

CLASS II, SECTION 1—5

09 Reginald Aldworth Daly.....	Cambridge
34 Sterling Price Fergusson.....	Milton
[03] 44 Charles Palache.....	Cambridge
17 Percy Edward Raymond.....	Lexington
11 Hervey Woodburn Shimer.....	Hingham

CLASS II, SECTION 2—3

- 40 Albert Francis Blakeslee.....Northampton
29 Joseph Horace Faull.....Cambridge
21 Elmer Drew Merrill.....Jamaica Plain

CLASS II, SECTION 3—3

- 15 Charles Thomas Brues.....Newtonville
22 Thorne Martin Carpenter.....Foxboro
15 Alexander Forbes.....Milton

CLASS II, SECTION 4—3

- 25 Robert Bayley Osgood.....Boston
32 Frederick Fuller Russell.....Louisville, Ky.
30 Fritz Bradley Talbot.....Brookline

CLASS III—THE SOCIAL ARTS—7

CLASS III, SECTION 1—1

- (28) 32 Edmund Allen Whitman.....Cambridge

CLASS III, SECTION 2—1

- 31 Sidney Bradshaw Fay.....Cambridge

CLASS III, SECTION 3—3

- 32 William James Cunningham.....Cambridge
32 Henry Wyman Holmes.....Cambridge
33 Abbott Payson Usher.....Madison, Wis.

CLASS III, SECTION 4—2

- 35 Jerome Davis Greene.....Cambridge
36 Clair Elsmere Turner.....Arlington

CLASS IV—THE HUMANITIES—21

CLASS IV, SECTION 1—4

- 28 Walter Fenno Dearborn.....Cambridge
30 William Henry Paine Hatch.....Exeter, N. H.
21 William Ernest Hocking.....Madison, N. H.
28 Henry Bradford Washburn.....Cambridge

CLASS IV, SECTION 2—4

12	George Henry Chase.....	Cambridge
21	William Scott Ferguson.....	Cambridge
22	George La Piana.....	Wellesley
20	Charles Howard McIlwain.....	Auburndale

CLASS IV, SECTION 3—7

38	Richmond Laurin Hawkins.....	Cambridge
17	William Guild Howard.....	Cambridge
32	Ernest Felix Langley.....	Cambridge
32	Arthur Stanley Pease.....	Cambridge
44	La Rue Van Hook.....	New York, N. Y.
33	George Benson Weston.....	Cambridge
39	William Hoyt Worrell.....	Melbourne Beach, Fla.

CLASS IV, SECTION 4—6

29	Charles Townsend Copeland.....	Cambridge
41	Archibald Thompson Davison.....	Lincoln
29	Edward Burlingame Hill.....	Francestown, N. H.
21	Chandler Rathfon Post.....	Cambridge
[35] 44	Walter Raymond Spalding.....	Cambridge
22	Charles Henry Conrad Wright.....	Cambridge

FOREIGN HONORARY MEMBERS—147

(Number limited to one hundred and fifty)

CLASS I—MATHEMATICAL AND PHYSICAL SCIENCES—41

SECTION 1—*Mathematics and Astronomy*—12

50	Henri Cartan.....	Paris
39	Arnaud Denjoy.....	Paris
34	Ronald Aylmer Fisher.....	Cambridge, England
20	Jacques Salomon Hadamard.....	Paris
27	Ejnar Hertzsprung.....	Leiden
45	Sir Harold Spencer Jones.....	Greenwich
46	Bertil Lindblad.....	Stockholm
46	Jan Hendrik Oort.....	Leiden
47	Meghnad N. Saha.....	Calcutta
47	G. A. Shajn.....	Simeis, U. S. S. R.
15	Charles Jean de la Vallée Poussin.....	Louvain
29	Hermann Weyl.....	Princeton, N. J.

CLASS I, SECTION 2—*Physics*—12

29	Vilhelm Frimann Koren Bjerknes.....	Oslo
45	Niels Bohr.....	Copenhagen
50	Sir John Douglas Cockcroft.....	Harwell, England
50	Paul Adrien Maurice Dirac.....	Cambridge, England
24	Albert Einstein.....	Princeton, N. J.
29	James Franck.....	Chicago, Ill.
29	Abram F. Joffé.....	Leningrad
48	Max Felix Theodor von Laue.....	Göttingen
50	Wolfgang Pauli.....	Zürich
50	Erwin Schrödinger.....	Dublin
48	Arnold Sommerfeld.....	Munich
47	Sir George Paget Thomson.....	London

CLASS I, SECTION 3—*Chemistry*—10

27	Peter Debye.....	Ithaca, N. Y.
50	George De Hevesy.....	Copenhagen
33	Jaroslav Heyrovsky.....	Prague
33	Fritz Paneth.....	Durham
48	Sir Robert Robinson.....	Oxford
38	Leopold Ruzicka.....	Zürich
38	Nevil Vincent Sidgwick.....	Oxford
48	The Svedberg.....	Uppsala
49	Chaim Weizmann.....	Rehovoth, Israel
29	Heinrich Wieland.....	Munich

CLASS I, SECTION 4—*Technology and Engineering*—7

36	Edward Victor Appleton.....	London
46	Clarence Decatur Howe.....	Ottawa
34	Luigi Lombardi.....	Rome
50	Adolph Meyer.....	Baden, Switzerland
29	Ludwig Prandtl.....	Göttingen
29	Emil Probst.....	Oxford
31	Karl Willy Wagner.....	Friedrichsdorf

CLASS II—NATURAL AND PHYSIOLOGICAL SCIENCES—31

SECTION 1—*Geology, Mineralogy, and Physics of the Globe*—6

36	Raoul Blanchard.....	Grenoble, France
29	Léon William Collet.....	Geneva
34	Arthur Holmes.....	Edinburgh
22	Emmanuel de Margerie.....	Paris
44	Ezequiel Ordoñez.....	Mexico, D. F.
47	Wong Wen-hao.....	Nanking

CLASS II, SECTION 2—*Botany*—9

48	P. Boysen-Jensen.....	Copenhagen
46	Rudolf Florin.....	Stockholm
50	Hendrik Gunnar Lundegårdh.....	Uppsala
47	P. Maheshwari.....	Dacca, India
32	Kingo Miyabe.....	Sapporo, Japan
42	Lorenzo Raimundo Parodi.....	Buenos Aires
47	Alf Erling Persild.....	Ottawa
29	Otto Renner.....	Jena
35	Sir William Wright Smith.....	Edinburgh

CLASS II, SECTION 3—*Zoology and Physiology*—11

38	Edgar Douglas Adrian.....	Cambridge, England
48	Charles Herbert Best.....	Toronto
20	Maurice Caullery.....	Paris
38	Emmanuel Fauré-Frémiet.....	Paris
34	Archibald Vivian Hill.....	London
41	Bernado Alberto Houssay.....	Buenos Aires
48	Archibald Gowanlock Huntsman.....	Toronto
30	Louis Édouard Lapicque.....	Paris
50	Kaj Ulrik Linderström-Lang.....	Copenhagen
50	Rudolph Albert Peters.....	Oxford
50	Hugo Theorell.....	Stockholm

CLASS II, SECTION 4—*Medicine and Surgery*—5

39	Sir Aldo Castellani.....	Rome
27	Sir Henry Hallett Dale.....	London
33	Sir Arthur Keith.....	London
50	Wilder Graves Penfield.....	Montreal
18	Sir Charles Scott Sherrington.....	Cambridge, England

CLASS III—THE SOCIAL ARTS—36

SECTION 1—*Jurisprudence*—12

44	Victor Andres Belaunde.....	Lima
47	Paal Berg.....	Oslo
33	François Geny.....	Nancy
38	Arthur Lehman Goodhart.....	Oxford
39	Baron Greene (Wilfrid Arthur Greene).....	Holmbury St. Mary, Surrey
33	Hans Kelsen.....	Berkeley, Cal.
38	Baron Macmillan (Hugh Pattison Macmillan).....	Ewhurst, Surrey
33	Juljusz Makarewicz.....	Lwów
48	Léon Julliot de la Morandière.....	Paris
33	Giorgio Del Vecchio.....	Rome
38	Baron Wright (Robert Alderson Wright).....	Burbage, Wilts
38	John C. H. Wu.....	Vatican City

SECTION 2—*Government, International Law, and Diplomacy*—11

48	José d'Almada.....	Lisbon
38	Dionisio Anzilotti.....	Rome
46	Winston Churchill.....	London
32	Paul Claudel.....	Paris
50	Herbert Vere Evatt.....	Canberra, Australia
50	Trygve Halvdan Lie.....	Lake Success, N. Y.
50	Jawaharlal Nehru.....	New Delhi, India
32	Hu Shih.....	Peiping
50	Paul-Henri Spaak.....	Brussels
38	Kenzo Takayanagi.....	Tokyo
49	Sir Alfred Zimmern.....	Springfield, Mass.

SECTION 3—*Economics and Sociology*—9

32	Arthur Lyon Bowley.....	Haslemere, Surrey
39	Henry Clay.....	Oxford
44	Daniel Cosío Villegas.....	Mexico, D. F.
35	Luigi Einaudi.....	Rome
32	Ralph George Hawtrey.....	London

35 René Maunier.....	Paris
28 Arthur Cecil Pigou.....	Cambridge, England
32 Charles Rist.....	Versailles
45 Dennis Holme Robertson.....	Cambridge, England

SECTION 4—*Administration and Affairs*—4

33 Gösta A. Bagge.....	Stockholm
38 Heinrich Brüning.....	Cambridge, Mass.
45 Alfredo Lorenzo Palacios.....	Buenos Aires
38 B. Seeborn Rowntree.....	North Dean, Bucks

CLASS IV—THE HUMANITIES—39

SECTION 1—*Theology, Philosophy, and Psychology*—8

50 Karl Barth.....	Basle
28 Benedetto Croce.....	Naples
29 Étienne Gilson.....	Melun
28 Wolfgang Köhler.....	Swarthmore, Pa.
37 Henri Piéron.....	Paris
46 Francisco Romero.....	Buenos Aires
50 Sir William David Ross.....	Oxford
47 Godfrey Hilton Thomson.....	Edinburgh

SECTION 2—*History, Archaeology, and Anthropology*—8

23 Rafael Altamira y Crevea.....	Madrid
36 Marcel Aubert.....	Paris
50 George Norman Clark.....	Oxford
33 Friedrich Meinecke.....	Berlin-Dahlem
50 John Ernest Neale.....	London
40 Martin Persson Nilsson.....	Lund
49 Arnold Joseph Toynbee.....	Oxford
31 George Macaulay Trevelyan.....	Cambridge, England

SECTION 3—*Philology*—10

44 Amado Alonso.....	Arlington, Mass.
47 Hamilton Alexander Rosskeen Gibb.....	Oxford
47 Joseph Klausner.....	Jerusalem
36 Paul Kretschmer.....	Vienna
32 Paul Mazon.....	Paris
17 Ramón Menéndez Pidal.....	Madrid
50 Roger Aubrey Baskerville Mynors.....	Cambridge, England
45 Tomás Navarro Tomás.....	New York, N. Y.
[12] 28 Hanns Oertel.....	Munich
32 Frederick William Thomas.....	Bodicote nr. Banbury

SECTION 4—*The Fine Arts and Belles Lettres*—13

40	Fernand Baldensperger.....	Paris
48	Jean-Marie Carré.....	Paris
40	Paul Hindemith.....	New Haven, Conn.
34	Serge Koussevitzky.....	Brookline
27	Gilbert Murray.....	Oxford
49	Oscar Niemeyer.....	Rio de Janeiro
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 Lawrence, R. R. FE, I:4
 Lawrence, W. H. F, I:4
 Lawson, A. C. F, II:1
 Lee, R. I. F, II:4
 Leeds, M. E. F, III:4
 Leith, C. K. F, II:1
 Leland, W. G. F, IV:2
 Lessells, J. M. F, I:4
 Levin, H. T. F, IV:3
 Levine, J. F, IV:4
 Levine, S. A. F, II:4
 Levinson, N. F, I:1
 Levorsen, A. I. F, II:1
 Lewis, C. I. F, IV:1
 Lewis, F. T. F, II:3
 Lewis, W. K. F, I:3
 Lie, T. H. FHM, III:2
 Lillenthal, D. E. F, III:4
 Lillie, R. S. F, II:3
 Lindblad, B. FHM, I:1
 Linderström-Lang, K. U. FHM, II:3
 Lindsay, R. B. F, I:2
 Linforth, I. M. F, IV:3
 Lingane, J. J. F, I:3
 Lingelbach, W. E. F, IV:2
 Linton, R. F, IV:2
 Lipmann, F. A. F, I:3
 Lippmann, W. F, III:2
 Little, C. C. F, III:4
 Locke, E. A. F, II:4
 Loeb, R. F. F, II:4
 Lombardi, L. FHM, I:4
 Long, C. N. H. F, II:3
 Longcope, W. T. F, II:4
 Loofbourow, J. R. F, II:3
 Lord, M. E. F, IV:4
 Lord, R. C. F, I:3
 Lowe, E. A. F, IV:3
 Lowell, R. F, III:4
 Lull, R. S. F, II:3
 Lundegardh, H. G. FHM, II:2
 Lutz, B. R. F, II:3
 Luyten, W. J. F, I:1
 Lyman, T. F, I:2

- Lyons, L. M. F, III:4
 McAdams, W. H. F, I:4
 McCrea, R. C. F, III:3
 McEwen, G. F. F, II:1
 MacGregor, C. W. F, I:4
 McIlwain, C. H. FE, IV:2
 MacInnes, D. A. F, I:3
 MacIver, R. M. F, III:3
 McKeehan, L. W. F, I:2
 McKeon, R. P. F, IV:1
 McKinstry, H. E. F, II:1
 MacLane, S. F, I:1
 McLaren, W. W. F, III:3
 McLaughlin, D. H. F, II:1
 MacLaurin, W. R. F, III:3
 MacLeish, A. F, IV:4
 Macmillan, Baron FHM, III:1
 McNair, M. P. F, III:3
 Macneil, S. F, III:1
 MacNider, W. de B. F, II:4
 Maginnis, C. D. F, IV:4
 Magruder, C. F, III:1
 Mahony, T. H. F, III:1
 Maheshwari, P. FHM, II:2
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 Malamud, W. F, II:4
 Malone, D. F, III:4
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 Mann, T. F, IV:4
 Manship, P. F, IV:4
 Margerie, E., de FHM, II:1
 Marin, J. F, IV:4
 Mark, K. L. F, I:3
 Marks, L. S. F, I:4
 Marsh, D. L. F, III:4
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 Mather, F. J. F, IV:4
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 Mazon, P. FHM, IV:3
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 Mead, W. J. F, II:1
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 Melander, A. L. F, II:3
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 Mitchell, S. F, IV:2
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 Mitchell, W. DeW. F, III:1
 Miyabe, K. FHM, II:2
 Moe, H. A. F, III:4
 Monroe, A. E. F, III:3
 Moore, C. R. F, II:3
 Morandière, L. J., de la FHM, III:1
 Moreland, E. L. F, I:4
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 Morton, A. A. F, I:3
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- Munro, T. F, IV:4
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 Nathanson, I. T. F, II:4
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 Nehru, J. FHM, III:2
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 Neumann, J., von F, I:1
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 Nicholas, J. S. F, II:3
 Niemeyer, O. FHM, IV:4
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 Nock, A. D. F, IV:1
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 Northrop, J. H. F, I:3
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 Nourse, E. G. F, III:3
 Noyes, G. R. F, IV:3
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 O'Brian, J. L. F, III:1
 O'Connor, J. F, IV:1
 Oertel, H. FHM, IV:3
 Ogburn, W. F. F, III:3
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 Olmsted, F. L. F, I:4
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 Onsager, L. F, I:3
 Oort, J. H. FHM, I:1
 Oppenheimer, J. R. F, I:2
 Ordoñez, E. FHM, II:1
 Osgood, R. B. FE, II:4
 Osterhout, W. J. V. F, II:2
 Page, L. F, I:2
 Palache, C. FE, II:1
 Palacios, A. L. FHM, III:4
 Paneth, F. FHM, I:3
 Panofsky, E. F, IV:4
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 Parker, G. H. F, II:3
 Parkman, H., Jr. F, III:1
 Parodi, L. R. FHM, II:2
 Parsons, T. F, III:3
 Patch, H. R. F, IV:3
 Paton, W. A. F, III:3
 Pauli, W. FHM, I:2
 Pauling, L. C. F, I:3
 Payne-Gaposchkin, C. F, I:1
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 Pease, A. S. FE, IV:3
 Peers, E. A. FHM, IV:4
 Peiree, G. J. F, II:2
 Pender, H. F, I:4
 Penfield, W. G. FHM, II:4
 Pepper, G. W. F, III:1
 Peters, J. L. F, II:3
 Peters, R. A. FHM, II:3
 Pfeiffer, R. H. F, IV:2
 Phillips, H. B. F, I:1
 Phillips, W. F, III:2
 Philpott, A. J. F, IV:4
 Pickard, G. W. F, I:4
 Pierce, G. W. F, I:2
 Piéron, H. FHM, IV:1
 Pigou, A. C. FHM, III:3
 Pilsbry, H. A. F, II:3
 Pincus, G. F, II:3
 Piston, W. H. F, IV:4
 Plough, H. H. F, II:3
 Poor, C. L. F, I:1
 Porsild, A. E. FHM, II:2
 Post, C. R. FE, IV:4
 Pound, R. F, III:1
 Prandtl, L. FHM, I:4
 Pratt, C. C. F, IV:1
 Pratt, F. H. F, II:3
 Pratt, J. H. F, II:4
 Prescott, S. C. FE, I:3
 Price, L. F, IV:4
 Probst, E. FHM, I:4
 Proger, S. F, II:4
 Purcell, E. M. F, I:2
 Purves, C. B. F, I:3
 Putnam, H. F, III:4
 Putnam, T. J. F, II:4

- Qua, S. E. F, III:1
 Quinby, W. C. F, II:4
 Quine, W. V. O. F, IV:1
 Rabi, I. I. F, I:2
 Rackemann, F. M. F, II:4
 Ramsey, N. F. F, I:2
 Rand, H. W. F, II:3
 Raper, K. B. F, II:2
 Rapport, D. F, II:3
 Raup, H. M. F, II:2
 Raymond, P. E. FE, II:1
 Read, C. F, IV:2
 Redfield, A. C. F, II:3
 Redfield, R. F, IV:2
 Reichenbach, H. F, IV:1
 Reid, H. R. F, III:4
 Reissner, E. F, I:1
 Renner, O. FHM, II:2
 Richards, A. N. F, II:3
 Riddle, O. F, II:3
 Rist, C. FHM, III:3
 Robbins, W. J. F, II:2
 Robertson, D. H. FHM, III:3
 Robinson, D. M. F, IV:2
 Robinson, F. N. F, IV:3
 Robinson, Sir R. FHM, I:3
 Rochow, E. G. F, I:3
 Rock, J. F, II:4
 Roeder, K. D. F, II:3
 Roethlisberger, F. J. F, III:3
 Rogers, A. F. F, II:1
 Rollins, H. E. F, IV:3
 Rollins, R. C. F, II:2
 Romer, A. S. F, II:3
 Romero, F. FHM, IV:1
 Rosanoff, M. A. F, I:3
 Ross, Sir W. D. FHM, IV:1
 Rossby, C. G. A. F, II:1
 Rossi, B. B. F, I:2
 Rostovtzeff, M. I. F, IV:2
 Rotch, A. G. F, III:4
 Rowntree, B. S. FHM, III:4
 Rüdenberg, R. F, I:4
 Ruggles, A. H. F, II:4
 Ruggles, C. O. F, III:3
 Russell, F. F. FE, II:4
 Russell, G. E. FE, I:4
 Russell, H. N. F, I:1
 Ruthven, A. G. F, II:3
 Ruzicka, L. FHM, I:3
 Sachs, P. J. F, IV:4
 Saha, M. N. FHM, I:1
 Salter, W. T. F, II:4
 Salvemini, G. F, III:2
 Samuelson, P. A. F, III:3
 Sanders, H. A. F, IV:3
 Sanders, T. H. F, III:3
 Sarton, G. F, IV:2
 Sawyer, C. H. F, IV:4
 Sayre, F. B. F, III:1
 Scatchard, G. F, I:3
 Schaller, W. T. F, II:1
 Schell, E. H. F, III:4
 Schmitt, B. E. F, IV:2
 Schmitt, F. O. F, II:3
 Schneider, H. W. F, IV:1
 Scholte, J. H. FHM, IV:4
 Schrödinger, E. FHM, I:2
 Schücking, L. L. FHM, IV:4
 Schumb, W. C. F, I:3
 Schwinger, J. S. F, I:2
 Scott, A. W. F, III:1
 Scott, D. F, IV:2
 Sedgwick, E. F, IV:4
 Sedgwick, H. D. F, IV:4
 Selekman, B. M. F, III:3
 Seymour, C. F, III:4
 Seznee, J. J. F, IV:3
 Shajn, G. A. FHM, I:1
 Shapley, H. F, I:1
 Shattuck, G. C. F, II:4
 Shattuck, H. L. F, III:4
 Shaw, H. S. F, III:4
 Sherburn, G. W. F, IV:3
 Sherrill, H. K. F, IV:1
 Sherrill, M. S. F, I:3
 Sherrington, Sir C. S. FHM, II:4
 Sherwood, T. K. F, I:4
 Shimer, H. W. FE, II:1
 Shryock, R. H. F, IV:2
 Shuster, G. N. F, III:4
 Sibelius, J. J. C. FHM, IV:4

- Sidgwick, N. V. FHM, I:3
 Simmons, J. S. F, II:4
 Simonds, B. F, IV:4
 Simpson, G. G. F, II:1
 Singleton, C. S. F, IV:3
 Sinnott, E. W. F, II:2
 Slater, J. C. F, I:2
 Slipher, V. M. F, I:1
 Sloan, A. P., Jr. F, III:4
 Sloan, G. A. F, III:4
 Sloan, J. F, IV:4
 Smith, A. C. F, II:2
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 Smith, H. W. F, II:3
 Smith, L. B. F, I:3
 Smith, P. F, III:4
 Smith, R. M. F, II:4
 Smith, Sir W. W. FHM, II:2
 Snyder, J. C. F, II:4
 Soderberg, R. C. F, I:4
 Sollmann, T. H. F, II:4
 Sommerfeld, A. FHM, I:2
 Sonneborn, T. M. F, II:3
 Sorokin, P. A. F, III:3
 Sosman, M. C. F, II:4
 Spaak, P.-H. FHM, III:2
 Spalding, W. R. FE, IV:4
 Spaulding, H. N. F, III:4
 Sperry, W. L. F, IV:1
 Spinden, H. J. F, IV:2
 Spoehr, H. A. F, II:2
 Spofford, C. M. F, I:4
 Sprague, O. M. W. F, III:3
 Stadler, L. J. F, II:2
 Stafford, R. H. F, IV:1
 Stakman, E. C. F, II:2
 Stanley, W. M. F, I:3
 Starck, T. F, IV:3
 Stearns, A. W. F, III:4
 Stebbins, J. F, I:1
 Stephenson, C. C. F, I:3
 Stetson, H. C. F, II:1
 Stetson, H. T. F, I:1
 Stevens, S. S. F, IV:1
 Stewart, G. W. F, I:2
 Stewart, R. B. F, III:2
 Stockbarger, D. C. F, I:2
 Stockmayer, W. H. F, I:3
 Stoke, H. W. F, III:3
 Stouffer, S. A. F, III:3
 Stratton, J. A. F, I:2
 Stravinsky, I. FHM, IV:4
 Street, J. C. F, I:2
 Struik, D. J. F, I:1
 Struve, O. F, I:1
 Sturtevant, A. H. F, II:3
 Sulzberger, A. H. F, III:4
 Sumner, J. B. F, I:3
 Svedberg, T. FHM, I:3
 Sverdrup, H. U. F, II:1
 Swan, T. W. F, III:1
 Taft, P. F, III:3
 Takayanagi, K. FHM, III:2
 Talbot, F. B. FE, II:4
 Tarski, A. F, IV:1
 Taylor, A. F, IV:3
 Taylor, C. F. F, I:4
 Taylor, C. H. F, IV:2
 Taylor, C. L., Jr. F, IV:1
 Taylor, E. S. F, I:4
 Taylor, F. H. F, IV:4
 Taylor, H. S. F, I:3
 Taylor, W. R. F, II:2
 Terman, L. M. F, IV:1
 Terzaghi, K. F, I:4
 Thannhauser, S. J. F, II:4
 Theorell, H. FHM, II:3
 Thimann, K. V. F, II:2
 Thomas, F. W. FHM, IV:3
 Thompson, M. deK. FE, I:2
 Thompson, R. F, IV:4
 Thomson, G. H. FHM, IV:1
 Thomson, Sir G. P. FHM, I:2
 Thomson, W. F, IV:3
 Thorn, G. W. F, II:4
 Thurstone, L. L. F, IV:1
 Tillich, P. J. F, IV:1
 Tisza, L. F, I:2
 Tolman, E. C. F, IV:1
 Torrey, C. C. F, IV:3
 Tosdal, H. R. F, III:3

- Toynbee, A. J. FHM, IV:2
 Tozzer, A. M. F, IV:2
 Trevelyan, G. M. FHM, IV:2
 Trump, J. G. F, I:4
 Tsien, H.-S. F, I:4
 Tucker, D. S. F, III:3
 Turner, C. E. FE, III:4
 Tuve, M. A. F, I:2
 Twaddell, W. F. F, IV:3
 Tyzzer, E. E. F, II:4
 Ulich, R. F, III:3
 Ullman, B. L. F, IV:3
 Unwin, Sir S. FHM, IV:1
 Urey, H. C. F, I:3
 Usher, A. P. FE, III:3
 Vallarta, M. S. F, I:2
 Vallée Poussin, C. J., de la FHM, I:1
 Van de Graaff, R. J. F, I:2
 Van Hook, L. R. FE, IV:3
 Van Niel, C. B. F, II:2
 Van Vleck, J. H. F, I:2
 Vaughan, T. W. F, II:1
 Veblen, O. F, I:1
 Vecchio, G., Del FHM, III:1
 Verhoeff, F. H. F, II:4
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 Viëtor, K. F, IV:4
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 Vigneaud, V., du F, I:3
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 Wagner, M. F, IV:4
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 Wald, G. F, II:3
 Walsh, J. L. F, I:1
 Wambaugh, S. F, III:2
 Warner, E. P. F, I:4
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 Washburn, H. B. FE, IV:1
 Watson, J. B. F, IV:1
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 Whitehead, T. N. F, III:3
 Whitman, E. A. FE, III:1
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 Whitney, W. R. F, I:3
 Whittlesey, D. S. F, II:1
 Widder, D. V. F, I:1
 Wieland, H. FHM, I:3
 Wigner, E. P. F, I:2
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 Wilkins, E. H. F, IV:3
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 Wolfson, H. A. F, IV:3

- Wolman, L. F, III:3
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Wood, R. W. F, I:2
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Woodward, R. B. F, I:3
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Wright, Baron FHM, III:1
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Wright, Q. F, III:2
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Wyman, L. C. F, II:3
Wyzanski, C. E., Jr. F, III:1
Yeomans, H. A. F, III:2
Yerkes, R. M. F, II:3
Young, B. L. F, III:4
Young, O. D. F, III:4
Young, R. C. F, I:3
Zacharias, J. R. F, I:2
Zariski, O. F, I:1
Zeleny, J. F, I:2
Zimmerman, C. C. F, III:3
Zimmern, Sir A. FHM, III:2
Zworykin, V. K. F, I:4

STATUTES

THE AMERICAN ACADEMY OF ARTS AND SCIENCES

Adopted November 8, 1911: amended May 8, 1912, January 8, and May 14, 1913, April 14, 1915, April 12, 1916, April 10, 1918, May 14, 1919, February 8, April 12, and December 13, 1922, February 14, March 14, and October 10, 1923, March 10, 1926, May 9, 1928, April 8, and November 11, 1931, April 12, 1933, February 14, 1934, December 14, 1938, January 11, April 12, 1939, May 8, 1940, May 14, 1941, November 18, 1942, and January 12, 1944, May 9, 1945, November 14, 1945, February 2, 1946, October 9, 1946, October 8, 1947, March 9, 1949, and October 11, 1950.

CHAPTER I

THE ACADEMY AND ITS CORPORATE SEAL

ARTICLE 1. The American Academy of Arts and Sciences is a body politic and corporate by the same name, forever, established by the Council and House of Representatives in General Court of the Province of Massachusetts Bay as recorded in Chap. 46 of the Acts of 1779.

ARTICLE 2. As enacted above, the stated end and design of the institution of the said Academy is to promote and encourage the knowledge of the antiquities of America, and of the natural history of the country, and to determine the uses to which the various natural productions of the country may be applied; to promote and encourage medical discoveries, mathematical disquisitions, philosophical enquiries and experiments, astronomical, meteorological and geographical observations; and improvements in agriculture, arts, manufacture and commerce; and, in fine, to cultivate every art and science which may tend to advance the interest, honor, dignity and happiness of a free, independent and virtuous people.

ARTICLE 3. The Corporate Seal of the Academy shall be as here depicted.



ARTICLE 4. The Secretary shall have the custody of the Corporate Seal.

See Chap. v, art. 3; chap. vi, art. 1.

CHAPTER II

MEMBERSHIP AND DUES

ARTICLE 1. The Academy shall consist of Fellows, elected from the citizens or residents of the United States of America, Fellows Emeriti, and Foreign Honorary Members. They are arranged in four Classes, according to the Arts and Sciences in which they are severally proficient, and each Class shall be divided into four Sections, namely:

CLASS I. *The Mathematical and Physical Sciences*

- Section 1. Mathematics and Astronomy
- Section 2. Physics
- Section 3. Chemistry
- Section 4. Technology and Engineering

CLASS II. *The Natural and Physiological Sciences*

- Section 1. Geology, Mineralogy, and Physics of the Globe
- Section 2. Botany
- Section 3. Zoology and Physiology
- Section 4. Medicine and Surgery

CLASS III. *The Social Arts*

- Section 1. Jurisprudence
- Section 2. Government, International Law, and Diplomacy
- Section 3. Economics and Sociology
- Section 4. Administration and Affairs

CLASS IV. *The Humanities*

- Section 1. Theology, Philosophy, and Psychology
- Section 2. History, Archaeology, and Anthropology
- Section 3. Philology
- Section 4. The Fine Arts and Belles Lettres

ARTICLE 2. The number of Fellows shall not exceed one thousand, of whom not more than two-thirds shall be residents of New England, nor shall there be more than two hundred and seventy-five in any one Class.

Any Fellow of the Academy on retiring from his academic or other regular duties may, if he so requests in writing, and with the approval of the Council, be transferred to the status of Fellow Emeritus.

Fellows Emeriti shall be exempt from payment of dues. They may not hold elective office in the Academy, nor serve on Standing Com-

mittees, nor vote at meetings, but shall have all the other privileges of Fellowship.

Fellows Emeriti shall be separately classified and shall be outside the statutory limit set on the total number of Fellows and the number in a given Class.

See Chap. ix, art. 3; chap. x, art. 1.

ARTICLE 3. The number of Foreign Honorary Members shall not exceed one hundred and fifty. They shall be chosen from citizens of foreign countries who are eminent for their discoveries or attainments in any of the Classes above enumerated. There shall be not more than forty-five in any one Class.

ARTICLE 4. Diplomas signed by the President and the Vice-President of the Class to which the member belongs, and countersigned by the Secretary, shall be given to Fellows and Foreign Honorary Members.

ARTICLE 5. If any person, after being notified of his election as Fellow or Foreign Honorary Member, shall neglect for six months to accept in writing, his election shall be void.

ARTICLE 6. Every Fellow hereafter elected shall pay an Admission Fee of ten dollars: if he shall neglect to pay this Fee within six months of the date of his election, his election shall become void.

Every Fellow resident within fifty miles of Boston shall pay, unless he enjoys statutory exemption, such Annual Dues, not exceeding fifteen dollars, as shall be voted annually in March by the Academy. These shall become due on the first of June.

Every Fellow residing more than fifty miles from Boston elected after 1938 shall pay, unless he enjoys statutory exemption, and other non-resident Fellows may pay, Annual Dues equal to one-half the amount set for resident Fellows.

ARTICLE 7. Exemption from further payment of Annual Dues shall be granted by the Council or its designate to any Fellow who has paid such dues, at either resident or non-resident rate, for forty years; or having attained the age of seventy-five, has paid dues for twenty-five years.

Exemption from further payment of Annual Dues shall be granted forthwith by the Council or its designate to any Fellow who pays into the treasury of the Academy the sum of two hundred dollars for the purpose of commuting subsequent dues, in addition to his previous payments.

ARTICLE 8. Any Fellow, resident or non-resident, who shall neglect to pay his Annual Dues for six months after they are due and who ignores notification by the Treasurer of the requirements of this Article of the Statutes shall cease to be a Fellow.

ARTICLE 9. Upon petition of any Fellow, the Council may by a majority vote suspend the application of any penalties hereinabove prescribed in this chapter for an additional period of time not longer than three months.

ARTICLE 10. Only Fellows who pay Annual Dues or are exempted from further payment by commutation of dues or otherwise as set forth in Article 7 of this Chapter may hold elective office in the Academy or serve on Standing Committees as specified in Chapter XI, or vote at meetings.

ARTICLE 11. If, in the opinion of a majority of the entire Council, any Fellow or Foreign Honorary Member shall have rendered himself unworthy of a place in the Academy, the Council shall recommend to the Academy the termination of his membership; and if three-fourths of the Fellows present out of a total attendance of not less than fifty at a Stated Meeting, or at a Special Meeting called for the purpose, shall adopt this recommendation, his name shall be stricken from the Roll.

See Chap. iii; chap. vi, art. 5 and 6; chap. x, art. 1.

CHAPTER III

NOMINATION AND ELECTION OF FELLOWS AND FOREIGN HONORARY MEMBERS

The procedure for nomination and election of Fellows and Foreign Honorary Members shall be as follows:

ARTICLE 1. Nominations may be made at any time by any two Fellows in writing on forms to be provided by the Secretary and shall be referred by him to the Committee on Membership.

The Committee on Membership shall meet following the stated meetings of the Academy in May, November, February and March, and at such other times as it may determine, to appraise nominations received by it from the Fellows from time to time, to originate further nominations, and to approve as candidates for election those receiving the favorable vote of two-thirds of the committee members present in any meeting attended by not less than five of its members.

Immediately following its meeting in February, the Committee shall cause to be sent to every Fellow a list of nominees, with biographical

and professional data thereon, together with names of nominators, for appraisal, expression of preference, or other comment by the Fellows.

The Committee, at its March meeting, shall review all nominations, together with comments by the Fellows thereon, and shall compile a list of approved candidates for the annual election of Fellows and Foreign Honorary Members. It shall present this list together with data pertaining thereto to the Council not later than at the Stated Meeting of the Council in April.

The Council, by vote of the majority of members present at a meeting, shall make final nominations from the list of approved persons recommended by the Committee on Membership for election by the Fellows.

ARTICLE 2. Election of Fellows and Foreign Honorary Members shall be made by a majority of the Fellows present at the Annual Meeting in May, from the nominations presented at that meeting by the Council.

ARTICLE 3. Each Fellow-elect or Foreign Honorary Member-elect shall immediately following his election be notified thereof in writing by the Secretary.

See Chap. ii; chap. vi, art. 5; chap. x, art. 1; chap. xi, art. 1 (ii).

CHAPTER IV

OFFICERS

ARTICLE 1. The Officers of the Academy shall be a President (who shall be Chairman of the Council), four Vice-Presidents (one from each Class), a Secretary (who shall be Secretary of the Council), a Treasurer, a Librarian, and an Editor, all of whom shall be elected by ballot at the Annual Meeting, and shall take office at the close of that meeting, and shall hold their respective offices for one year, and until others are duly chosen and take office.

There shall be also sixteen Councillors, one from each Section of each Class. At each Annual Meeting four Councillors, one from each Class, shall be elected by ballot to serve for a term of four years, and they shall take office at the close of that meeting, and shall hold office until others are duly chosen and take office. The same Fellows shall not be eligible for two successive terms.

The Councillors, with the officers previously named, and the Chairmen of the Standing Committees, *ex officio*, shall constitute the Council.

See Chap. xi, art. 1.

ARTICLE 2. If any officer be unable, through death, absence, or disability, to fulfill the duties of his office, or if he shall resign, his place may be filled by the Council in its discretion for any part or the whole of the unexpired term.

ARTICLE 3. At the Stated Meeting in February, the President shall appoint a Nominating Committee of four Fellows having the right to vote, one from each Class. This Committee shall prepare a list of nominees for the several offices to be filled, and for the Standing Committees, and file it with the Secretary not later than eight weeks before the Annual Meeting.

The Secretary shall transmit to the Fellows, previous to the stated meeting in April, the report of the Nominating Committee.

ARTICLE 4. Independent nominations for any office, if signed by at least twenty Fellows having the right to vote, and received by the Secretary not less than twenty days before the Annual Meeting, shall be included in the election procedure.

ARTICLE 5. The Secretary shall prepare for use in voting at the Annual Meeting a ballot containing the names of all persons duly nominated for office.

CHAPTER V THE PRESIDENT

ARTICLE 1. The President, or in his absence a Vice-President, shall preside at meetings of the Academy.

See Chap. vi, art. 3.

ARTICLE 2. The President shall be the chief executive officer of the Academy. He shall present to the Council for its consideration all matters pertinent to the interests of the Academy and to the discharge of its obligations to the community or to the advancement of scholarship.

ARTICLE 3. Any deed or writing to which the Corporate Seal is to be affixed, except leases of real estate, shall be executed in the name of the Academy by the President or in the event of his death, absence, or inability, by one of the Vice-Presidents, when thereto duly authorized by the Council.

ARTICLE 4. In case of incapacity of the President, the Council shall designate a Vice-President to carry out the duties of the office.

See Chap. ii, art. 4; chap. iv, art. 1, 3; chap. vi, art. 3; chap. viii, art. 4; chap. x, art. 3; chap. xi, art. 1 (ii), (iii), (x); chap. xii, art. 1.

CHAPTER VI

THE SECRETARY

ARTICLE 1. The Secretary shall provide for the custody of the Charter, Corporate Seal, Statute Book, Journals of the Academy, and other Archives.

ARTICLE 2. He shall be responsible for the correspondence of the Academy and of the Council. At each meeting of the Council he shall present any important communications addressed to the Academy which have been received since the previous meeting, and at the next meeting of the Academy he shall present such matters as the Council may determine.

ARTICLE 3. He shall attend the meetings of the Academy and the Council and shall arrange for the keeping of a faithful record of the attendance and of the proceedings. In the absence of the President and of all the Vice-Presidents, he shall call the meeting to order and preside until a chairman is chosen by majority vote of the Fellows present.

ARTICLE 4. He shall apprise officers and committees of their election or appointment, and inform the Treasurer and the Chairman of each Standing Committee of appropriations of money voted by the Academy.

ARTICLE 5. He shall notify all persons who may be elected Fellows or Foreign Honorary Members, send to each a copy of the Statutes, and on their acceptance issue the proper Diploma. After all elections, he shall insert in the Records the names of the Fellows by whom the successful nominees were proposed.

ARTICLE 6. He shall keep and cause to be printed annually a list of the Fellows and Foreign Honorary Members, arranged in their several Classes and Sections, and a list of Fellows and Foreign Honorary Members of whose deaths he has been informed.

ARTICLE 7. He shall arrange for the preservation of records of the death of Fellows and Foreign Honorary Members and biographical notices published on the occasion of their death, or at other times.

See Chap. i, art. 2; chap. ii, art. 4; chap. iii; chap. iv, art. 1, 3, 4, 5; chap. ix, art. 3; chap. xi, art. 1 (iii), 2; chap. xii, art. 1, 3.

CHAPTER VII

THE TREASURER AND THE TREASURY

ARTICLE 1. The Treasurer shall collect all money due or payable to the Academy and all gifts or bequests made to it. He shall pay all bills due and payable by the Academy when approved by the proper officers. He shall sign all leases of real estate in the name of the Academy. He shall be the official custodian of all bonds, stocks and other securities and, with the written approval of any one member of the Committee on Finance, he shall have full authority to sell and transfer, invest and reinvest from time to time in such manner and upon such terms as shall to him seem best, the whole or any part of the personal property of the said Academy.

He shall keep a faithful account of all receipts and expenditures, submit his accounts annually to the Auditing Committee, and render them at the expiration of his term of office, or whenever required to do so by the Academy or the Council.

He shall keep separate accounts of the income of the Rumford Fund, and of all other special Funds, and of the appropriation thereof, and render them annually.

He shall fund all payments received in commutation of Dues, their income only to be applied toward current expenditures.

His accounts shall always be open to the inspection of the Council.

ARTICLE 2. He shall report annually to the Council at its March meeting on the expected income of the various Funds and from all other sources, together with appropriations needed by Officers and Standing Committees for the ensuing fiscal year. He shall also report the names of all Fellows who may be then delinquent in the payment of their Annual Dues.

ARTICLE 3. He shall give such security for the trust reposed in him as the Academy may require.

ARTICLE 4. With the approval of a majority of the Committee on Finance, he may appoint an Assistant Treasurer to perform his duties, for whose acts, as such assistant, he shall be responsible; or, with like approval and responsibility, he may employ any Trust Company doing business in Boston as his agent for the same purpose, the compensation of such Assistant Treasurer or agent to be fixed by the Committee on Finance and paid from the Funds of the Academy.

ARTICLE 5. At the Annual Meeting he shall report in print all his official doings for the preceding year, stating the amount and condition of all the property of the Academy entrusted to him, and the character of the investments.

ARTICLE 6. The Financial Year of the Academy shall begin with the first day of April.

ARTICLE 7. No person or committee shall incur any debt or liability in the name of the Academy, unless in accordance with a previous vote and appropriation therefor by the Academy or the Council, or sell or otherwise dispose of any property of the Academy, except cash or invested funds, without previous consent and approval of the Council.

See Chap. ii, art. 2, 6, 7, 8; chap. iv, art. 1; chap. vi, art. 4; chap. ix, art. 6; chap. xi, art. 1 (i), (iv), (v), art. 2; chap. xii, art. 1.

CHAPTER VIII

THE LIBRARIAN AND THE LIBRARY

ARTICLE 1. The Librarian shall have charge of the Library and keep a correct catalog of it.

ARTICLE 2. The Librarian shall have authority to expend such sums as may be appropriated by the Academy for the purchase, repair, or maintenance of books, periodicals, etc., and for defraying other necessary expenses connected with the Library.

ARTICLE 3. The Librarian shall have the custody of the publications of the Academy. With the advice and consent of the President, he may effect exchanges with other associations.

See Chap. iv, art. 1; chap. xi.

CHAPTER IX

THE EDITOR AND THE PUBLICATIONS

ARTICLE 1. The Editor shall have charge of the conduct through the press of the publications of the Academy. Together with the Committee on Publication he shall determine the contents of the publications.

ARTICLE 2. The publications of the Academy shall be as follows:

(i) The Proceedings shall be published at least semi-annually as soon as may be possible after the Annual May Meeting, and the stated December meeting next following, and shall contain a record of each stated or special meeting of the Academy. They shall be known respectively as the Summer and Winter numbers of the Proceedings.

The Summer number of the Proceedings shall include reports of the officers and standing committees for the preceding year; a list of the officers, councillors and members of standing committees elected at

the preceding Annual Meeting; and such other matter as the Publication Committee may approve.

The Winter number of the Proceedings shall include a current list of officers, councillors, standing committees, Fellows and Foreign Honorary Members; the Statutes of the Academy; the Act of Incorporation of 1780 and its amendments; and such biographical notices or other matter as the Committee on Publication may approve.

In the discretion of the Committee on Publication, interim numbers of the Proceedings may be issued for the publication of accepted serial papers or other scholarly material.

(ii) Memoirs, monographs and volumes of collected papers may be published from time to time.

(iii) The Bulletin of the American Academy of Arts and Sciences shall be published eight times each year preceding the stated meetings, containing notices of such meetings, communications from the Council or Officers, and such other matter as may be of timely interest to the Fellows.

ARTICLE 3. A copy of the Summer and Winter numbers of the Proceedings shall be mailed to each Fellow, Fellow Emeritus, and Foreign Honorary Member.

A copy of the Bulletin shall be mailed to each Fellow and Fellow Emeritus, and Foreign Honorary Member.

A copy of any Interim number of the Proceedings shall be mailed only to those Fellows, Fellows Emeriti, and Foreign Honorary Members, who shall make written request to the Secretary for that number.

ARTICLE 4. Fellows who pay Annual Dues or who are exempted from further payment thereof under Chapter II, Article 7, Fellows Emeriti, and Foreign Honorary Members shall be entitled, upon written request to the Librarian, to receive gratis one copy of each number of Proceedings, Memoirs, and Bulletin which have been issued after their election and are available.

ARTICLE 5. Not more than two hundred extra copies of each paper printed in the Proceedings shall be placed at the disposal of the author without charge.

ARTICLE 6. The Editor shall have the authority to expend for printing and other expenses of publication such sums as may be appropriated by the Academy for such purposes; also such sums as may be made available to him by the Council from any source for particular publications under the sponsorship of the Academy.

See Chap. iv, art. 1; chap. xi, art. 1 (vi).

CHAPTER X

THE COUNCIL

ARTICLE 1. The Council shall exercise general supervision over all affairs of the Academy not explicitly reserved to the Academy as a whole.

It shall consider all nominations of Fellows and Foreign Honorary Members duly sent to it by the Committee on Membership, and act upon them in accordance with the provisions of Chapter III.

With the consent of the person concerned it shall have power to transfer in respect to status, Class, or Section.

ARTICLE 2. Nine members shall constitute a quorum.

ARTICLE 3. It shall act upon all resignations and forfeitures of membership in the Academy.

It shall appoint all agents and subordinates not otherwise provided for by the Statutes, prescribe their duties, and fix their compensation. They shall hold their respective positions during the pleasure of the Council.

It shall fill any vacancy caused by death, resignation or incapacity of any officer.

ARTICLE 4. It may authorize the appointment for terms not exceeding one year, and prescribe the functions of such committees of its number or of the Fellows of the Academy, as it may deem expedient, to facilitate the administration of the affairs of the Academy or to promote its interests.

ARTICLE 5. At the stated March meeting of the Academy it shall recommend for action at that meeting the appropriations which in its opinion should be made for the ensuing fiscal year, and the Annual Dues therefor.

It may recommend special appropriations at any Stated Meeting of the Academy, or at a Special Meeting, in the call for which such business shall have been included.

See Chap. ii, art. 2, 10; chap. iii, art. 1, 2; chap. iv, art. 1, 2; chap. v, art. 2, 3; chap. vi, art. 2, 3; chap. vii, art. 1, 2, 7; chap. ix, art. 6; chap. xi, art. 1; chap. xii, art. 1, 4, 6.

CHAPTER XI

STANDING COMMITTEES

ARTICLE 1. At each Annual Meeting, the following Standing Committees shall be perpetuated by election by ballot by the Fellows of the appropriate number of nominees to maintain the strength of each

committee as provided hereinbelow. A Fellow shall not be eligible for election for two successive terms.

(i) *The House Committee* shall consist of three Fellows, one of whom shall be elected at each Annual Meeting to serve for a term of three years. One member of this committee shall in such an election be designated by the electors to serve as Chairman of the House Committee for the duration of the term for which he has been elected as a member of the committee. It shall have general charge of maintaining the House of the Academy in suitable condition for the uses thereof approved by the Council.

The Chairman of the House Committee or his designate shall approve in writing all expenditures within its authorized budget or special appropriations for repairs, services, supplies, or operation of the House, including compensation of House employees.

The House Committee, in consultation with the Treasurer, shall determine the equitable proportion of expense to be assessed for the use of the facilities of the House which have been approved by the Council for other than Academy activities.

(ii) *The Committee on Membership* shall consist of the President, *ex officio*, as Chairman, and eight other Fellows, one of whom from each of the four Classes shall be elected annually to serve for a term of two years. It shall have the duties designated to it in Chapter III.

(iii) *The Committee on Meetings* shall consist of the President as Chairman, the Secretary, who shall act as secretary of the committee, and the four Vice-Presidents, *ex officio*, together with four other Fellows, one from each Class, two of whom shall be elected annually to serve for a term of two years. It shall arrange for meetings of the Academy.

(iv) *The Committee on Finance* shall consist of the Treasurer as Chairman, *ex officio*, and four other Fellows, two of whom shall be elected annually to serve for a term of two years. It shall have general supervision of the investments of the Academy.

(v) *The Auditing Committee* shall consist of two Fellows, one of whom shall be elected annually to serve for a term of two years. It shall audit the accounts of the Treasurer with power to employ an expert and to approve the payment of his charges.

(vi) *The Committee on Publication* shall consist of the Editor as Chairman, *ex officio*, and four other Fellows, one from each Class,

two of whom shall be elected annually to serve for a term of two years. It shall have the authority and the responsibility of determining the contents and of effecting the printing of the publications of the Academy as set forth in Chapter IX.

(vii) *The Permanent Science Fund Committee* shall consist of seven Fellows of whom there shall be elected at Annual Meetings in each triennium, respectively, two, two, and three members, each to serve for a term of three years. One member of this Committee shall, in such an election, be designated by the electors to serve as Chairman for the duration of the term for which he has been elected as a member of the Committee. It shall review all applications for grants addressed to it and shall from time to time recommend to the Council appropriate disbursements from the income received by the Academy from the Trustee of the Permanent Science Fund, for carrying out the purposes set forth in the Agreement and Declaration of Trust which governs the use of this income.

(viii) *The Rumford Committee* shall consist of seven Fellows of whom there shall be elected at Annual Meetings in each triennium, respectively, two, two, and three members, each to serve for a term of three years. One member of this Committee shall, in such an election, be designated by the electors to serve as Chairman for the duration of the term for which he has been elected as a member of the Committee. It shall invite applications for pecuniary assistance in support of researches in the general fields of heat and light broadly interpreted, and shall from time to time recommend to the Council disbursements in support thereof from the income from the Rumford Fund. Biennially it shall recommend to the Council a candidate for the reception of the Rumford Medal to be awarded in accordance with the Rumford trust, and shall in general see to the proper execution of this trust.

(ix) *The C. M. Warren Committee* shall consist of seven Fellows of whom there shall be elected at Annual Meetings in each triennium, respectively, two, two, and three members, each to serve for a period of three years. One member of this Committee shall, in such an election, be designated by the electors to serve as Chairman for the duration of the term for which he has been elected as a member of the Committee. It shall invite applications for pecuniary assistance from any person wishing to engage in research in any branch of chemistry, and shall recommend to the Council such applications as seem worthy of aid and such other disbursements from the income

of the C. M. Warren Fund as it deems appropriate to the advancement of research in chemistry.

(x) *The Amory Prize Committee* shall consist of seven Fellows, each of whom shall serve from the time of his election until his successor is elected. Immediately after the Annual Meeting in 1950 and at least every seventh year thereafter it shall at the call of its senior officer, meet and elect from its own members, a chairman and a secretary, each to serve for seven years or until his successor is elected in a similar manner at an interim meeting at which at least five members shall cast their votes. For each septennium beginning with that which was concluded on November 10, 1933, it shall recommend to the Council for its approval a recipient or recipients of the Amory Prize and a gold medal or other token of honor and merit to be conferred upon each by the President and Fellows of the Academy in recognition of an invention or other contribution in the medical field specified in and according to the terms of the bequest of Francis Amory.

ARTICLE 2. Each Standing Committee shall confine its recommendations and its expenditures to such sum in each fiscal year as shall have been notified to its Chairman by the Secretary of the Academy as appropriations voted by the Academy, or by the Treasurer as income available for its purposes.

ARTICLE 3. Each Standing Committee shall report to the Academy at the Annual Meeting its acts of the previous year.

See Chap. iii; chap. iv, art. 1, 3; chap. vi, art. 4; chap. vii, art. 1, 2, 4; chap. ix, art. 1, 2.

CHAPTER XII

MEETINGS, COMMUNICATIONS, AND AMENDMENTS

ARTICLE 1. There shall be annually eight Stated Meetings of the Academy, namely, on the second Wednesday of October, November, December, January, February, March, April, and May. Only at these meetings, or at adjournments thereof regularly notified, or at Special Meetings called for the purpose, shall appropriations of money be made or amendments of the Statutes be effected.

The Stated Meeting in May shall be the Annual Meeting of the Corporation.

Special Meetings shall be called by the Secretary at the request of the President, of the Council, or of ten Fellows having the right to

vote; and notifications thereof shall state the purpose for which the meeting is called.

The Council shall have authority, as occasion may demand, to arrange additional meetings and to cancel any of the statutory meetings, except that meetings for transacting business shall be held as required by the Statutes.

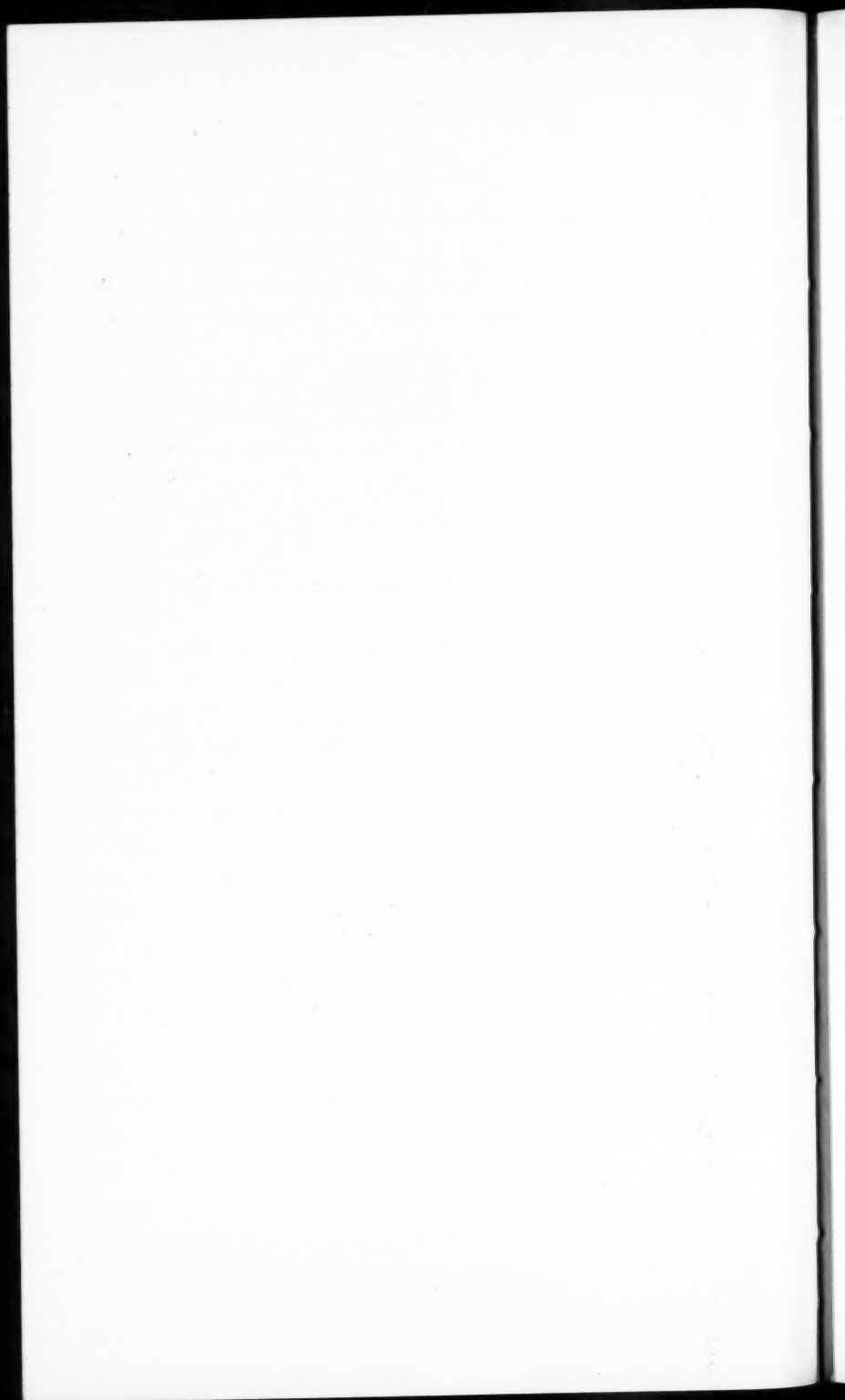
ARTICLE 2. Except as otherwise provided, twenty-five Fellows having the right to vote shall constitute a quorum for the transaction of business at Stated or Special Meetings. Eighteen Fellows shall be sufficient to constitute a meeting for literary or scientific communications and discussions.

ARTICLE 3. Upon the request of the presiding officer or the Secretary, any motion or resolution offered at any meeting shall be submitted in writing.

ARTICLE 4. Fellows may introduce guests at any of the literary or scientific meetings of the Academy.

ARTICLE 5. All amendments to the Statutes, whether proposed by Fellows or by the Council, shall be considered by the Council and reported with recommendations for action to the Academy. At a subsequent Stated Meeting, or at a Special Meeting called for the purpose, the notice for which in either case shall state this proposed amendment, the Academy shall act upon the amendment. Two-thirds of the Fellows present, in a meeting of not less than forty Fellows, must vote in the affirmative to enact the amendment.

See Chap. ii, art. 6, 10; chap. iii, art. 1, 2; chap. iv, art. 1, 3, 4, 5; chap. v, art. 1; chap. vi, art. 2, 3; chap. vii, art. 2, 5; chap. ix, art. 2; chap. x, art. 5; chap. xi, art. 1, 3.



CHARTER OF INCORPORATION

An Act to incorporate and establish a Society for the cultivation and promotion of Arts and Sciences. Granted May 4, 1780, by an Act of the Legislature of Massachusetts, and amended by the Acts of 1910, 1911, 1931, and 1947.

As the Arts and Sciences are the foundation and support of agriculture, manufactures, and commerce; as they are necessary to the wealth, peace, independence, and happiness of a people; as they essentially promote the honor and dignity of the government which patronizes them; and as they are most effectually cultivated and diffused through a State by the forming and incorporating of men of genius and learning into public societies for these beneficial purposes.

Be it therefore enacted by the Council and House of Representatives in General Court assembled and by the authority of the same, that [sixty-two persons]¹ be, and they hereby are formed into, constituted, and made a body politic and corporate, by the name of THE AMERICAN ACADEMY OF ARTS AND SCIENCES, and that they, and their successors, and such other persons as shall be elected in the manner hereafter mentioned, shall be and continue a body politic and corporate, by the same name forever.

And be it further enacted by the authority aforesaid, that the Fellows of the said Academy may from time to time elect a President, one or more Vice-Presidents, one or more Secretaries, and such other officers of the said Academy as they shall judge necessary or convenient; and they shall have full power and authority from time to time to determine and establish the names, number, and duties of their several officers, and the tenure or estate they shall respectively have in their offices; and also to authorize and empower their President, or some other Fellow of the Academy, at their pleasure, to administer such oaths to such officers as they shall appoint and determine, for the well-ordering and good government of the said Academy, provided the same be not repugnant to the laws of this State.

And be it further enacted by the authority aforesaid, that the Fellows of the said Academy shall have one Common Seal, which they may make use of in whatsoever cause or business shall concern the Academy, or be relative to the end and design of its institution; and shall have power and authority from time to time to break, change, and renew the Common Seal, at their pleasure; and that they may sue and be

¹For the names of the Fellows incorporated, see *Memoirs*, Vol. XI, Part I, pp. 33, 34.

sued, in all actions, real, personal, and mixed, and prosecute and defend the same unto final judgment and execution, by the name of the President and Fellows of the American Academy of Arts and Sciences.

And be it further enacted by the authority aforesaid, that the Fellows of the said Academy may from time to time elect such persons to be Fellows thereof, as they shall judge proper, and that they shall have full power and authority from time to time to suspend, expel, or disfranchise any Fellow of the said Academy who shall by his conduct render himself unworthy of a place in that body, in the judgment of the Academy; and also to settle and establish the rules, forms, and conditions of election, suspension, expulsion, and disfranchisement.

And be it further enacted by the authority aforesaid, that the Fellows of the said Academy shall have full power and authority from time to time to make and enact such reasonable rules, orders, and bylaws, not repugnant to the laws of this State, as shall be necessary or convenient for the well-ordering and good government of the said Academy, and to annex reasonable pecuniary fines and penalties to the breach of them, not exceeding the sum of *twenty pounds*, to be sued for and recovered in any court of record within this State, in the name and for the use of the President and Fellows of the said Academy; and the same rules, orders, and bylaws to repeal at their pleasure; and also to settle and establish the times, places, and manner of convening the Fellows of the said Academy; and also to determine the number of Fellows which shall be present to constitute a meeting of the said Academy. *Provided*, that the Fellows of the said Academy shall meet twice in a year at the least; and that the place of their meeting shall never be more than thirty miles distant from the town of Boston.

And be it further enacted by the authority aforesaid, that the Fellows of the said Academy may, and shall forever hereafter, be deemed capable in the law, of having, holding, and taking in fee-simple, or any less estate, by gift, grant, devise or otherwise, any lands, tenements or other estate real and personal. *Provided*, that the said real estate shall not exceed in value the sum of *two hundred thousand dollars*, and the said personal estate shall not exceed in value the sum of *five hundred thousand dollars*, all the sums mentioned in the preceding section of this act to be valued in silver at the rate of *six shillings and eightpence* by the ounce. And the annual interest and income of the said real and personal estate, together with the fines and penalties aforesaid, shall be appropriated for premiums to encourage improvements and discoveries in agriculture, arts, and manufactures, or for other purposes consistent with the end and design of the institution of the said Academy as the Fellows thereof shall determine.

And be it further enacted by the authority aforesaid, that the end and design of the institution of the said Academy is, to promote and encourage the knowledge of the antiquities of America, and of the natural history of the country, and to determine the uses to which the various natural productions of the country may be applied; to promote and encourage medical discoveries; mathematical disquisitions; philosophical inquiries and experiments; astronomical, meteorological, and geographical observations; and improvements in agriculture, arts, manufactures, and commerce; and, in fine, to cultivate every art and science which may tend to advance the interest, honor, dignity, and happiness of a free, independent, and virtuous people.

And it is further enacted, that the place where the first meeting of the Fellows of the said Academy shall be held shall be the Philosophy Chamber in the University of Cambridge; and that the Honorable James Bowdoin, Esq., be, and he hereby is authorized and empowered to fix the time for holding the said meeting, and to notify the same to the Fellows of the Academy.

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